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ABSTRACT

The fourth in a series of technical reports on public education finance in Oregon, this study identifies significant developments from 1968 to 1983 in elementary and secondary finance as well as probable future trends. In addition, it briefly compares the financial standings among Oregon school districts and compares Oregon's school finance system with that of other states. Forty-five variables, for items as diverse as student population and consumer price indexes, are computed to show average annual rates of growth or decline in factors affecting school finance. As the most reflective of recent trends, those factors emphasized for discussion are student enrollment, school staffing, expenditures, revenues, state property tax relief, and projections for future student enrollment, future economic trends in general, and future school operating expenditures and revenues. A comparison of Oregon school districts then surveys relative levels of state aid to schools and computes the extent of property tax relief and equalization that state aid affords to school districts. Finally, Oregon is ranked in comparison to other states on such bases as per capita expenditures for local schools and percentages of federal support. (JW)

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Financial Trends and Analysis:

A Developing Crisis In Elementary and Secondary Schools

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Technical Report No. 4

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April 1983

FORE

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Public Elementary and Secondary School Finance:
Trends and Comparisons
Technical Report No. 4

Introduction

This report, fourth in a series of technical reports on public education finance in Oregon, provides additional information on the elementary and secondary education sector. In particular, it is directed at three questions that have surfaced (among many) in the preceding reports. The specific questions addressed are as follows:

(1) What are the recent trends in elementary and secondary finance and what is likely to occur in the next ten years;
(2) How does Oregon's school finance system compare with other states, and
(3) How diverse are Oregon school districts, i.e., how do they compare with one another?

The report is organized into three parts, one for each question. In addition, there is a brief discussion of future data needs.

Highlights:

Recent trends, 1968-69 to 1982-83 --

* Student enrollment in Oregon's elementary/secondary system peaked in 1970, and has declined steadily and significantly -- 7.7 percent statewide -- since then.

* School employment continued to grow through 1979-80, rising 29.7 percent. For the past two years, employment has decreased (6.6 percent) for a 15-year total increase of 21 percent.

* Total current operating expenditures have increased approximately 400 percent, averaging 10.4 percent per year. Inflation increased 279 percent, averaging 7.1 percent per year. Real deflated operating expenditures therefore have increased, at an average rate of 2.6 percent per year.

* Real operating expenditures have increased less than Oregon real personal income.

* On a per student basis, increases in real operating expenditures combined with declining enrollment result in real costs per student increasing 51 percent over the 15 years. The students per staff ratio has fallen over this period.

* The money to pay for these real expenditure increases did not come from property taxes. Local school and ESD levies have remained fairly constant over the fifteen years, trending upwards slightly for the most recent two years. School and ESD levies as a percent of total property tax levies generally have been decreasing.

* Basic School Support (BSSF) from the state has grown over twice as fast as inflation over the 15 years, at 450 percent compared to 179 percent.

* State contributions to BSSF plus school's share of property tax relief have increased 621 percent, from 1.2 percent of Oregon total personal income in 1968-69 to 2.0 percent in 1982-83, peaking in 1979-80 at 2.4 percent. (Property tax relief began in 1971-72.)

* The real dollar increases going to elementary/secondary education haven't helped teachers' average salaries. Real average salaries peaked in 1970-71 and while they have risen for the past two years, have fallen 10 percent overall since 1970-71.

* Miscellaneous data suggest that teacher salaries and benefits, combined, have kept pace with inflation -- but the data may not be representative of the state. Statwide data with respect to benefits is not available for the time period covered in this report.

Future trends --

* Student enrollment is expected to continue to decline through 1983-84 and then increase through 1992, reaching the peak levels experienced in 1970.

* Total operating costs are likely to increase with inflation and increased enrollments, at almost 8 percent growth per year.

* Real operating expenditures per student are likely to increase, but expenditures are affected by revenue availability, an area not within the scope of this report. It is anticipated that pressures will mount on both state and local revenue sources, but school expenditures could be tempered by revenue constraints.

On intra-state comparisons --

* Oregon school districts vary substantially in their ability to provide a uniform education program. Total property value per student is seen to range at least from $75,500 to $656,000 (ignoring a special case with $996,000). Districts with more property wealth can fund programs with lower tax rates -- and therefore potentially with more local taxpayer support.

* Program expenditures per student vary widely from $1982 per ADM to $4800 per ADM in the sample districts examined -- a range of over 140 percent.

* Total state BSSF grants per student range from $711 per ADM to $1653 in the districts examined.

* Equity in school finance, attempted through state BSSF equalization grants, can be promoted only by continuing substantial state General Fund appropriations to BSSF, if the existing formula is maintained.

Part 1: Trends in K-12 Finance

Recent Trends

To try to determine recent trends in elementary and secondary school finance, data have been accumulated covering the past 15 years, from 1968-69 to 1982-83. Forty-five variables, for items diverse as student population and consumer price indexes, are shown in Appendix A. The school finance data generally are shown for fiscal years, e.g., 1968-69. Other data, such as population or the Consumer's Price Index, are for calendar years, e.g., 1968.

The names and average annual growth rates for each of the variables are shown on Table 1. Following are general observations on some of the variables.

Enrollment

Student population (ADM) has been gradually decreasing since the peak in 1970-71, at a 15-year average annual rate of -.44 percent per year. The number of students has declined by 36,000, or 7.7 percent, since 1970-71. This decrease in students in public schools can be compared to increases in Oregon population (1.86 percent per year), increases in U.S. population (1.09 percent) and greater increases in wage and salary employment (2.59 percent). This decrease in ADM is attributable to the post-World War II "baby boom" having moved through the educational system, with declining birth rates (until recent years) and, to some extent, to increased enrollments in private schools.

Staffing

The decline in students has been accompanied by increases in the number of staff. The number of staff has increased by 21 percent over the 15 year period, while the number of students

has decreased 6 percent. The corresponding ratio of students-to-staff (variable "ADM/ST" in Appendix A) has dropped from 12.1 to 9.4 from 1968-69 to 1982-83. There undoubtedly are a number of reasons for the increase, including addition of classroom assistants and technical personnel, such as reading specialists, counselors and specialists in teaching special education students. The number of staff have declined for the past two years.

Table 1: Variable Names and 1968-1982 Average Annual Growth Rates

Variable	Name (and abbreviation)	Average Annual Growth Rate, %
1	Year	na
2	Average Daily Membership, K-12 (ADM)	-0.44
3	Oregon Population (ORPOP)	1.86
4	U.S. Total Population (USPOP)	1.09
5	Total Current Operating Expenditures, K-12 (TOPEXP), Sum for all districts [a]	10.41
6	Total Current Operating Expenditures per ADM (EX/ADM) [b]	10.61
7	Wage and Salary Employment, Manufacturing, Oregon (WSEMPL)	2.59
8	State True Cash Value (TCV)	12.63
9	Total School and ESD Property Tax Levies (SCHLV)	9.33
10	Total Property Tax Levies (TOTLV) [c]	10.37
11	Oregon Employment	2.35
12	Portland Consumers Price Index-All Urban Consumers (ORCPIU)	7.07
13	Gross National Product, Current Dollars (GNP$)	9.46
14	Gross National Product, 1972 Dollars (GNP72$)	2.47
15	Oregon Per Capita Personal Income (ORY/P)	8.47
16	Oregon Total Personal Income (ORPY)	10.67
17	Basic School Support Fund Appropriations (BSSF)	12.96
18	Oregon Personal Income Tax Collections (PIT$)	11.97
19	Property Tax Relief Appropriations (TAXREL)	na
20	Average Salary, K-12, All Employees (AVESAL)	7.12
21	"Real" (Deflated) Operating Expenditures per ADM (REX/AD) [d]	2.98
22	"Real" School Levies (RSCHLV)	1.61
23	Real Total Current Operating Expenditures (RTOTEX)	2.61
24	Average Computed School Tax Rates SCHRAT)	-2.01
25	Real Oregon Personal Income (REALPI)	2.86
26	Real Average Salaries, K-12, All (RAVSAL)	-0.44
27	Staff, Full-Time Equivalents, K-12 (STAFF#)	1.38
28	Ratio of Basic School Support Funds to Personal Income (BSS/PI)	na

Table 1 (cont'd.)

Variable	Name (and abbreviation)	Average Annual Growth Rate, %
29	Ratio of School Levies to Personal Income (SLV/PI)	na
30	Ratio of ADM to Total Staff Number (ADM/ST)	na
31	"Computed" Operating Expenditures per ADM (CX/ADM) [e]	na
32	Real "Computed" Operating Expenditures per ADM (RCX/AD) [f]	na
33	Ratio of Operating Expenditures to Staff Number (OX/STF) [g]	8.9
34	Real Operating Expenditures-to-Staff Ratio (ROPX/#)	1.22
35	Average Certificated Teachers' Salary (SALTCH)	7.03
36	Real Certificated Teachers' Salary (RSLTCH)	-0.52
37	Average Salary, Elementary Teachers (SALELM)	na
38	Average Salary, Jr. High Teachers (SALJRH)	na
39	Real Average Salary, Jr. High Teachers (RSLJRH)	na
40	Ratio of School Levies (including ESD levies) to Total Property Tax Levies (SLV/TL)	-0.9
41	School (+ESD) Portion of Property Tax Relief (SCHPTR) [h]	na
42	BSSF Appropriation plus School Portion of Property Tax Relief (BS+PTR)	15.2
43	Ratio of BSSF plus Property Tax Relief to Oregon Personal Income (BSPF/Y)	na
44	Real (deflated) BSSF plus Property Tax Relief (RBS+PR)	7.0
45	Real (deflated) Basic School Support Fund Appropriation (RBSSF)	5.0

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na: not applicable. Data consists of either ratios, or missing (or zero) values over the 15 year period.

Notes

a. Current operating expenditures include the district expenditures for the education program, i.e., instruction expenditures, maintenance, administration, transportation and more. Data is for the sum of all districts and excludes other education expenditures by ESDs and the State Department of Education.

Table 1 (cont'd.)

Notes cont'd.

b. As reported by the Department of Education.

c. Includes all local property tax levies (schools, ESDs, cities, counties, etc., including ruban renewal levies).

d. Variable 6 dividid by variable 12.

e. A recalculation of current operating expenditures per ADM, using variable 5 divided by variable 2.

f. Variable 31 divided by variable 12.

g. Variable 5 divided by variable 27.

h. Variable 40 times variable 19.

Expenditures

Increases in staff necessarily translate into increased costs. Total operating expenditures have increased faster than inflation, at 10.41 percent per year compared to an inflation rate of 7.07 percent per year, but less than growth in personal income. Growth in operating expenditures has not exceeded the 10.67 percent growth in Oregon personal income.

In real (non-inflationary) terms, total operating expenditures grew 2.61 percent per year, compared to 2.86 percent growth in real personal income.

When expenditures are examined on a per student basis, the real increases, combined with declining enrollments, results in expenditures per ADM increasing at an average rate of 10.81 percent per year, compared to 7.1 percent inflation. In real terms, real expenditures per student increased 2.98 percent per year.

An attempt was made to try to isolate the factors behind the cost increases. It already has been stated that most of the costs of education are for salaries and benefits -- a fact that should surprise no one for a labor-intensive industry. However, the data show that average salaries (AVESAL) for all personnel increased only 7.12 percent per year, which means that real average salaries for all personnel decreased over the 15 years at a rate of .44 percent per year. These statistics are contrary to the anticipated result -- especially when total operating costs have risen. The apparent discrepancy is explainable:

(1) while averages have decreased, total number employed has increased, at 1.38 percent per year.
(2) all employee benefits (and employer costs) are not reflected in the average salary statistics, and
(3) the data include an increasing number of relatively lower-paid teachers' aides and assistants.

When data were examined for certificated teachers only, the results were little changed: average salaries increased 7.03 percent per year, or in real terms decreased 0.53 percent per year. An additional comparison was made for elementary teachers versus junior high teachers. Junior high school teacher salaries increased slightly faster, at 7.91 percent per year compared to 7.84 percent. Junior high school teacher salaries generally are higher in absolute dollars than elementary teacher's salaries.

Thus, average base salaries (exclusive of some benefits) have not kept pace with inflation. Discussion with school administrators, however, indicate that the well-being of certificated staff has definitely improved over the last fifteen years. Benefits, ranging from retirement and medical to shortened classroom and paid days for leave, have contributed to increasing costs. Statistical data is not available to permit analysis of the total cost of employee benefits on a statwide level.

However, limited data are available for a few districts and indicate that teachers salaries have kept pace with inflation. When benefits are included, total remuneration often exceeds inflation. Again, the data do not necessarily represent all districts, but points out the potential for error by relying on averages.

A December 1982 factfinding study for a high school in Benton County examines a "hypothetical" teacher that began working in September 1965 and receives the standard annual increment, i.e., raises for additional education attainment. The salary was shown to increase 226.7 percent compared to a CPI increase of 203 percent. When "fringe benefits" were included, the increase in salary and benefits was calculated to be 247.9 percent.

A similar study for a Washington County Shool District reports that compensation for a new teacher at the bottom entry level has increased only 120 percent from 1968 to 1982, compared to an inflation increase of 177 percent. With benefits included,

however, the increase for a beginning teacher is 153 percent higher than the 1968 level -- still less than inflation. For existing teachers, however, those that began working in 1968, the salary increase has been 213 percent and, with fringe benefits, has been 250 percent.

It should be no surprise that teacher costs -- and therefore total operating expenditures -- increase faster than inflation. As employees move "vertically" through a salary schedule, receiving increases for years worked, costs will increase. As employees move "horizontally" through the salary schedule, i.e., receive raises for additional college credits obtained, there will be increases, whether or not there are additional cost-of-living (inflation) adjustments. The increases are tempered only by older, higher-paid teachers reaching the "ceiling", retiring or being replaced by lower-paid teachers.

An examination of district costs over 15 years for a teacher in a large urban school district, with the selected teacher having a Master's degree and 3 years experience in 1968-69, showed the following:

* annual salary increased from $7,290 to $26,456 (263 percent) in part because of additional educational attainment by the teachers as well as additional experience,
* annual retirement costs increased from $358 to $4,763 (1230 percent),
* insurance costs increased from $8 to $151 (1788 percent),
* FICA costs increased from $343 to $1773 (417 percent),
* Workers compensation costs increased from $16 to $122 (663 percent),
* Unemployment insurance costs increased from $0 to $256.

In total, district costs increased 318 percent, from $8014 to $33,521, from 1968-69 to 1982-83. This may be compared to inflation increases (Portland CPI-U) of 178.6 percent over that period.

Other factors should be noted that will account for cost increases: the public now pays for costs that in earlier years were borne by teachers. Many districts now provide compensation for education expenses, extra hours spent on extracurricular activities, and more. Fringe benefits have been mentioned, but -- as with most employees -- now include more than just health insurance, including items such as paid leave for personal business days, paid substitutes, etc.

Thus, a non-rigorous "spot" examination of salary and benefits indicate that they have increased in total, along with other non-employee expenses.

The statewide data show that the ratio of total operating expenditures-to-staff increased an average of 8.9 percent per year over 15 years. In real, deflated terms, the ratio of real operating expenditures to staff increased 1.22 percent per year.

Because data related to employee benefits is limited, further analysis should be conducted on a statistically-valid sample of case studies, where total salaries and benefits of randomly selected long-term employees can be examined. This would allow a more comprehensive picture of changes in compensation and duties.

Revenues

Schools are heavily dependent on property taxes as a revenue source. School levies (including ESD levies) increase 9.33 percent per year on average since 1968-69 -- and averaged 13.6 percent since 1978. These levy increases were exceeded by increases in the state's property value (TCV), which grew at an annual average rate of 12.63 percent. The result has been a gradual decrease in the school property tax rate, dropping from $25.23 per $1000 TCV in 1968-69 to $18.23 for 1982-83. In real (deflated) terms, school and ESD levies for 1982-83 are at about

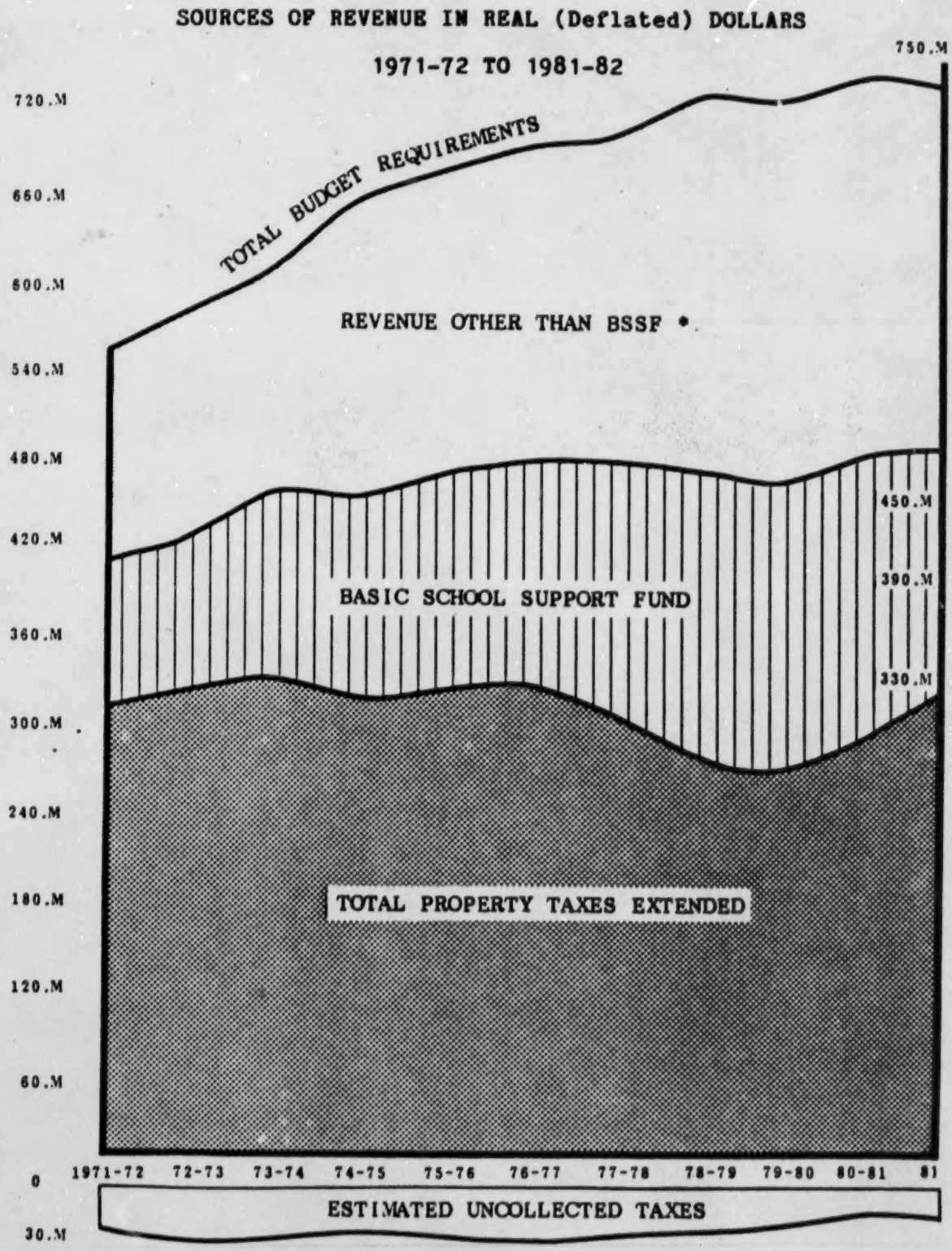
the same level as in 1972-73 and 1975-76 (see "RSCHLV", Appendix A). Real school levies have fluctuated around an average of $309 million, but have been on an upward trend for the last four years shown.

The relative stability in real property tax levies for schools during a period of increasing real costs leads one to ask where the money has come from. The answer is: mainly from state sources.

The data show that state contributions via the Basic School Support Fund (BSSF) appropriations have increased 450 percent over 15 years, averaging 12.96 percent per year. Real increases in BSSF, disallowing inflation, have been 197.6 percent in total, or about 5 percent per year. The current dollar growth has exceeded the growth rate in personal income tax collections (11.97 percent). When compared to total personal income, the ratio of Basic School Support Fund appropriations to Personal Income has increased from 1.17 percent in 1968-69 to 1.55 percent in 1982-83 -- an increase of one-third. This has resulted in a corresponding decrease in property tax levies: the ratio of school levies to personal income decreased from 4.1 percent in 1968-69 to 2.9 percent in 1978-80, but has recently increased to 3.5 percent in 1982-83. This shows the interrelationship of property tax levies and Basic School Support. Note that the ratio of BSSF to Personal Income has declined over the past five years, but real property tax levies have increased.

In Technical Report No. 2, it was stated that the local property tax is the "budget-balancer" for schools. If state appropriations via BSSF and other revenues are inadequate to fund school budgets, the remainder is funded by the local property tax. Figure 1 shows in real (deflated) terms the statewide total school budget requirements, and portions funded by BSSF, Other Revenues, and local property taxes. The data, shown on Exhibit 1 and Exhibit 2 were prepared by the Department of Education.*

Figure 1



Source* Department of Education

EXHIBIT 1

VARIATIONS OF SCHOOL REVENUE expressed in constant dollars (corrected for inflation by using July CPI and 1971 base index of 100 .

	1971-72	72-73	73-74	74-75	75-76	76-77	77-78	78-79	79-80	80-81	81-82
JULY C.P.I.	100.	102.9	109.4	123.7	135.2	144.7	156.2	171.4	195.6	217.5	241.7
TOTAL BUDGET REQUIREMENTS	563.0 M	588.4 M	611.3 M	667.0 M	680.1 M	698.7 M	699.8 M	732.1 M	723.7 M	743.7 M	737.6
As compared to base index	100	104	109	118	121	124	124	130	129	132	131
REVENUE OTHER THAN BSSF *	143.0 M	151.2 M	142.1 M	209.1 M	202.1 M	214.4 M	217.8 M	255.1 M	258.1 M	255.1 M	248.7
As compared to base index	100	106	99	146	141	150	152	178	180	178	174
BASIC SCHOOL SUPPORT FUND	99.0 M	100.4 M	127.0 M	137.8 M	148.1 M	149.9 M	170.7 M	199.4 M	194.1 M	191.4 M	167.4
As compared to base index	100	101	128	139	150	151	172	201	196	193	169
TOTAL PROPERTY TAXES EXTENDED	321.0 M	336.8 M	342.2 M	320.1 M	329.9 M	334.4 M	311.3 M	277.6 M	271.5 M	297.2 M	321.5
As compared to base index	100	105	107	100	103	104	97	86	85	93	100
ESTIMATED UNCOLLECTED TAXES	34.0 M	38.3 M	37.7 M	35.8 M	38.5 M	41.9 M	39.5 M	37.2 M	34.2 M	24.6 M	28.1

M = 1 Million dollars

* = REVENUE OTHER THAN BSSF includes TOTAL LOCAL REVENUE (with Beginning Cash Balance, Sale of Bonds, Transfers from Other Funds, Earnings from Investments, Tuition & Transportation, Food Services Sales, Sales of Assets,..etc.), + TOTAL INTERMEDIATE REVENUE (County School Fund Levy, Federal Forest Fees and Other sources), + TOTAL STATE CATEGORICAL REVENUE (Common School Fund, Special Education Programs, Driver Education, Special Schools and Other Revenue from State Sources), + TOTAL FEDERAL REVENUE (ESEA, CETA, National School Lunch Program, P.L. 94-142, P.L. 874 and Miscellaneous Federal Sources) + OFFSETS.

Source: Department of Education

EXHIBIT 2

STATE TOTAL from 3210 and from Summary of Valuations and Taxes levied.

	1971-72	1972-73	1973-74	1974-75	1975-76	1976-77	1977-78	1978-79	1979-80	1980-81	1981-82
True Cash Value	20,230,306,381	21,954,079,935	24,725,997,294	28,125,615,167	31,726,171,784	35,201,490,505	40,163,665,857	45,723,773,423	57,458,479,250	61,904,539,233	67,599,844,873
July Consumer Price Index	100	102.9	109.4	123.7	135.2	144.7	156.3	171.4	195.6	217.5	241.7
Total Budget Requirements	562,950,088	603,407,640	666,796,563	825,119,649	919,442,742	1,010,988,101	1,093,068,726	1,254,778,173	1,415,486,264	1,617,584,027	1,782,874,337
Receipts from Local Sources (including Beginning Cash Balance)	98,525,191	102,811,389	136,301,053	154,666,910	200,136,381	225,355,463	238,173,469	296,757,309	345,726,481	377,403,044	410,571,208
County School Fund levy	9,606,327	8,170,145	8,874,119	8,388,168	8,172,122	7,960,404	8,643,322	10,561,675	12,020,824	9,103,337	9,321,850
Federal Forest Fees	4,204,717	4,246,861	5,878,096	7,229,370	7,045,245	8,353,766	11,487,449	16,655,925	21,598,960	21,390,462	22,405,188
Other Intermediate Sources	6,726,421	9,541,639	10,853,404	13,291,291	13,654,520	14,952,553	15,925,911	18,746,794	14,934,085	15,767,097	18,370,013
Basic School Support Fund	58,992,637	103,300,768	104,272,787	170,517,909	200,179,319	216,976,503	266,668,471	292,423,388	379,742,943	416,265,269	404,491,561
Other State Sources	6,568,190	7,614,407	8,181,956	9,783,757	10,893,799	14,030,979	16,301,329	19,140,035	21,633,503	25,662,038	32,441,646
Revenue from Federal Sources	14,114,988	22,852,297	20,006,444	24,910,361	28,291,018	33,615,167	43,284,466	48,946,822	61,779,166	68,556,517	65,471,076
Total Budget Resources	238,738,472	258,937,507	294,347,859	428,787,806	468,572,404	521,844,836	600,428,417	703,231,888	857,435,962	934,147,764	963,152,542
*Certified levy (including taxes not received)	358,219,609	383,914,569	415,632,272	440,653,639	502,964,404	550,375,993	554,291,435	615,270,980	624,879,640	736,901,303	807,749,540
Local extended levy	269,313,082	290,149,060	217,019,711	342,661,215	412,365,441	474,605,228	476,905,918	539,485,841	597,812,706	699,914,752	845,038,586
Offsets (other)	3,227,613	53,778	34,688,102 x	434,328	4,806,148	6,037,549	6,381,439	75,785,138 x	27,066,934	36,986,511	41,789,213
Offsets (ESE equalization)	85,678,914	93,711,731	109,924,459	97,558,096	85,792,815	70,333,216	71,004,078	--	--	--	--
*Estimate of Taxes Levied but not Received	34,007,993	39,444,436	41,203,568	44,321,796	52,099,067	60,632,727	61,651,126	63,729,696	66,829,339	93,465,041	68,087,795
			34,685,102 x Basic Offset					49,369,942 x Basic Offset			

Oregon Department of Education
School Finance & Data Information Services
May 6, 1982

Property Tax Relief

Analysis of the state's participation is incomplete without including Property Tax Relief. Data shows that substantial appropriations have been made to property tax relief, the effect of which is to assist local government (including cities and counties, as well as schools) to pass tax levies. The Homeowners and Renters Refund Program (HARRP) and the 30% Property Tax Relief program (PTR) peaked at $266 million in 1981-82.

When the school and ESD portion of property tax relief is combined to appropriations for BSSF, one sees a 621 percent increase over the 15 year period. The combined total as a percent of Oregon personal income has increased from 1.2 percent of personal income in 1968-69 to 2.9 percent in 1982-83. In real, deflated terms, the total increase was 159 percent, or about 7 percent per year.

Trends, Relationships and the Future

The preceding discussion of trends is a prelude to what may occur over the next ten years. The discussion that follows examines key variables in education finance, particularly enrollments, expenditures, and the implications for revenues. Projection methodology varies: regression analysis was used to examine a variety of relationships, although the age-cohort method was used for enrollment projections and, occasionally, projections were based on "best guesses".

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* (from page 14)
While showing the relative importance and fluctuations of the major revenue categories since 1970-71, the data unfortunately include Beginning Cash Balances as part of "Other Revenues", instead of separately.

Student Enrollment (ADM) and Population

Projected student average daily membership (ADM) is shown on Table 2. Enrollment is expected to decline through 1983 and then increase to 1992, barely surpassing the enrollment experienced in the peak year of 1970. Limited attempts were made to explain ADM as a function of population and employment, but primarily due to time constraints an alternative -- but standard -- method was used. Both the Department of Education and the Oregon Education Coordinating Commisson (OECC) use an age-cohort survival method, where birth rates and current student population by grade are used to project enrollment each year by grade level. Figure 2 shows the most recent projection made by OECC, extended by the consultant. The dotted line shows enrollment figures (430,000) being used for making BSSF appropriations, which if accurate would lower the projected portion of the curve by 1000-2000 students.

Figure 3 shows Oregon live birth rates per 1000 population, from 1945 to 1980. For the ADM projections, the birth rate per 1000 was assumed constant at the 1981 level, 16.2.

The Center for Population Research, Portland State University, predicts a total net migration for the 1980 decade of only 90,000 persons, compared to the 1970 migration legel of 400,000 [1] By the year 1990, Oregon's population is expected to be 2,940,000 -- a 12 percent increase for the decade. The population projection is shown on Figure 4. The PSU projection translates into an average annual growth rate of 1.28 percent per year from 1982. This compares to a 1968-1982 growth rate of 1.86

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1. Testimony of Ed Schafer, February 1, 1983, before the Committee on Housing and Urban Development, Oregon House of Representatives, (Exhibit A - p. 18.)

Table 2: Projections of ADM, Population and Inflation

	ADM	Population (PSU) 1.28%		1.86%	Portland CPI-U	(Change) %
1968 or 1968-69	460,371	2051		2051	103.5	(3.5)
1969	466,515	2076		2076	108.6	(4.9)
1970	468,725	2091		2091	113.2	(4.2)
1971	466,857	2143		2143	116.1	(2.6)
1972	464,188	2183		2183	119.5	(2.9)
1973	461,286	2225		2225	127.3	(6.5)
1974	458,979	2266		2266	142.8	(12.2)
1975	457,685	2249		2249	156.5	(9.6)
1976	458,148	2342		2342	166.9	(6.6)
1977	457,813	2396		2396	180.2	(8.0)
1978	455,163	2472		2472	198.3	(10.0)
1979	450,982	2544		2544	225.4	(13.7)
1980	446,673	2640		2640	255.4	(13.3)
1981	438,222	2661		2661	278.3	(9.0)
1982 Actual	432,708	2656		2656	288.4	(3.6)
1983 Projected	431,144	2690		2705	300.0	(4.0)
1984	432,597	2724		2756	315.3	(5.1)
1985	436,395	2759		2807	334.5	(6.1)
1986	441,329	2794		2859	356.2	(6.5)
1987	445,065	2830		2912	379.4	(6.5)
1988	448,615	2886		2967	404.1	(6.5)
1989	454,256	2903		3022	430.3	(6.5)
1990	462,056	2940	PSU	3078	458.3	(6.5)
1991	465,754	2978		3135	488.0	(6.5)
1992	476,010	3016		3193	519.7	(6.5)

Figure 2

AVERAGE DAILY MEMBERSHIP (ADM) PROJECTIONS

1968 - 1992

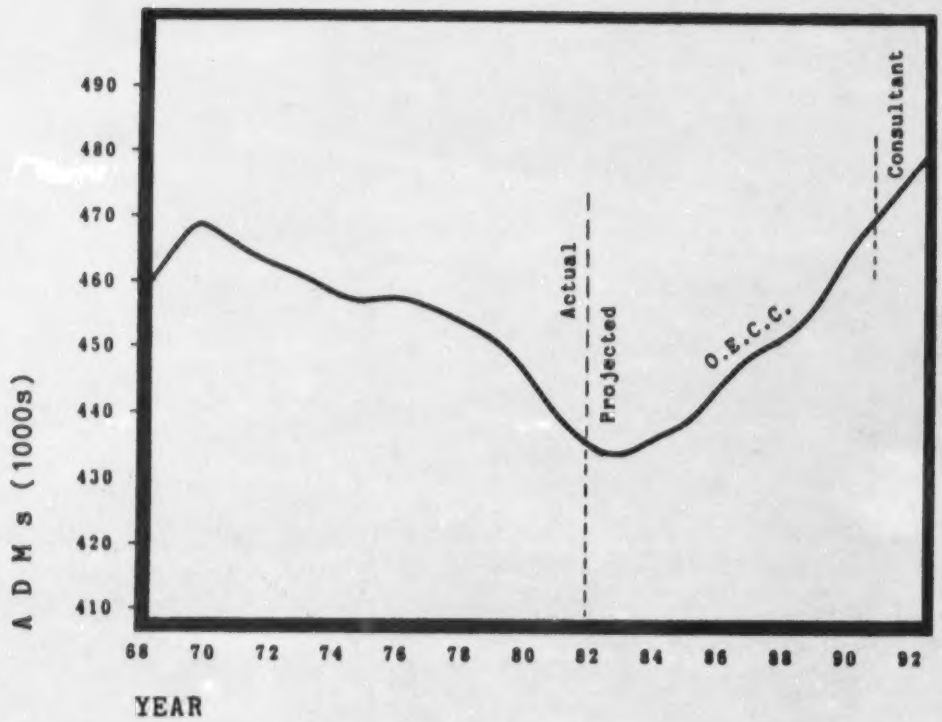
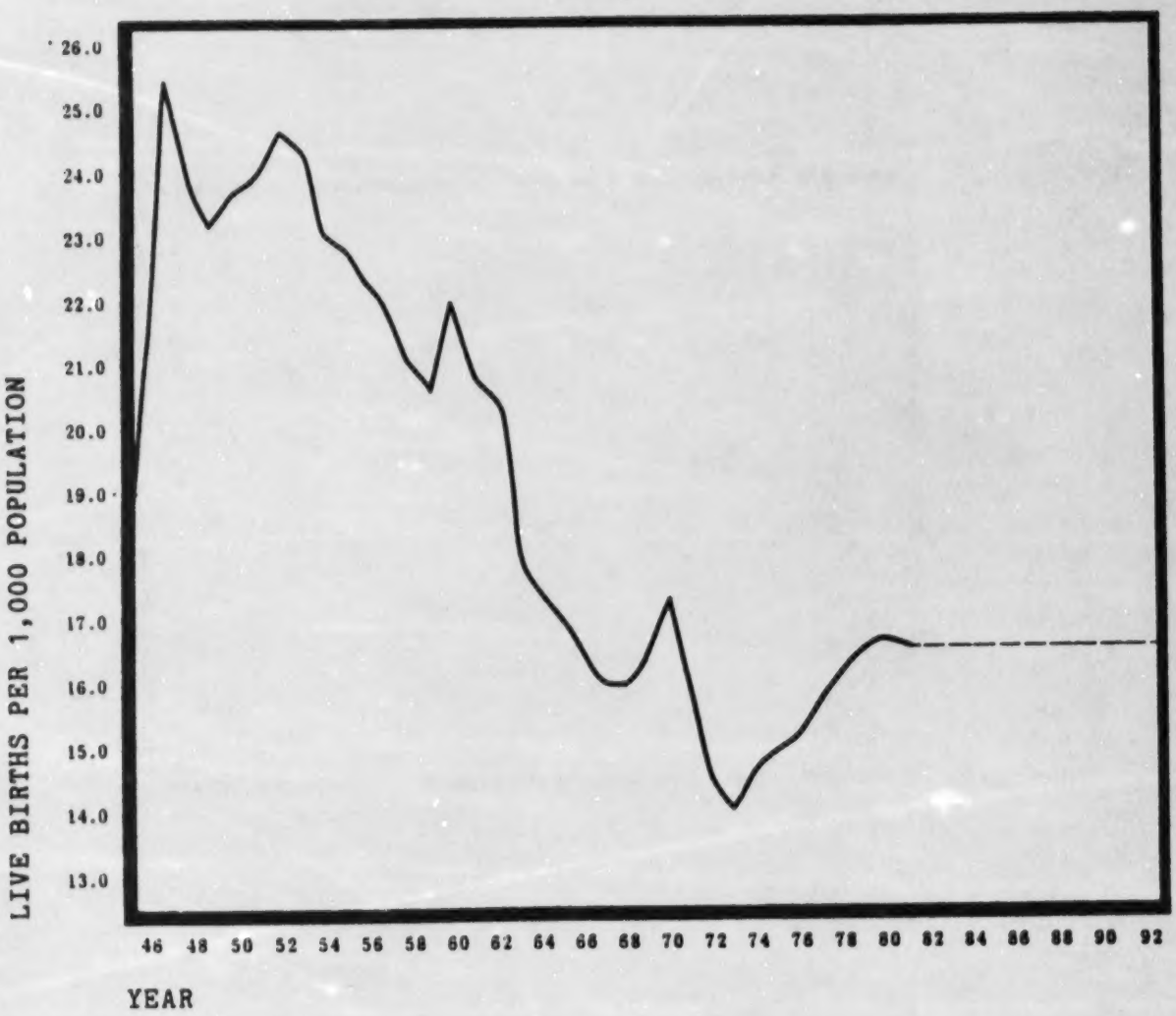


Figure 3

OREGON BIRTH RATES (Live Births per 1,000 population)

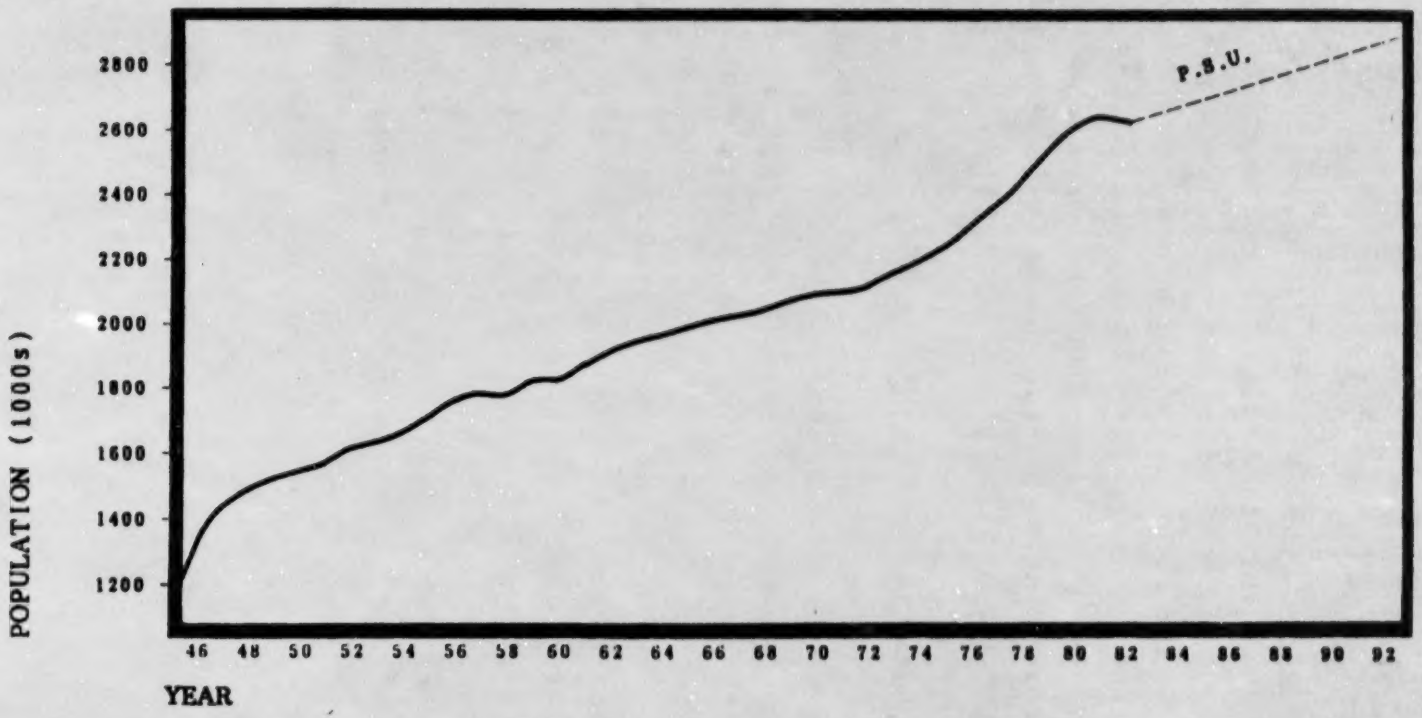
1945 to 1982



OREGON POPULATION

1945 TO 1992

Figure 4



30

31

Figure 4

percent per year, and reflects an assumption of "a very weak recovery of Oregon's economy". The annual projections of population, at both the PSU 1.28 percent annual average increase after 1982 and the longer-run average of 1.86 percent, are shown on Table 2.

Inflation. Also shown on Table 2 are the projections for the annual inflation rate as measured by the Portland Consumers' Price Index. For school expenditure projections, discussed next, the inflation rate is assumed to gradually increase up to 6.5 percent per year from 1986 through 1992. The estimates for the 1983-85 period are based on the Oregon Econometric projections, made jointly by the Oregon Executive Department and Data Resources, Inc. (DRI).

School Operating Expenditures

Analysis of data covering the past 15 years shows that school operating expenditures are almost perfectly correlated with inflation, i.e., as inflation increases or decreases, expenditures behave similarly. Appendix B shows the correlation matrix for 36 of the 39 variables discussed earlier.[2] The matrix shows that total operating expenditures have a 0.998 correlation coefficient with the Oregon Consumer's Price Index.[3] The correlation coefficient for expenditures per student and inflation also is nearly perfect, at 0.999. These high coefficients imply that school expenditures and expenditures per student, over time, are largely "explained" by inflation. Indeed, regression analysis applied to expenditures as a function of inflation, or of time, produce significant results, as shown in Appendix C.

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2. Three variables had missing data, thus were omitted from the matrix.
3. A coefficient of 1.000 is perfect correlation; 0.000 imlies absolutely no correlation.

An alternative analysis of total expenditures provides a better understanding of the relationship of expenditures to enrollments and inflation. Using the data shown on Table 3 and plotted on Figures 5 through 8, it is shown that total operating expenditures could easily grow at 7.8 percent average annual rate from 1982 to 1992. This is less than the 10.4 percent annual growth experienced from 1968 to 1982, but still has important implications for school finance in Oregon.

Two estimates were made for total operating expenditures. The first was based on the assumption that real operating expenditures per ADM would remain constant over the next 1o years. Real Operating Expenditures/ADM (REX/AD) actually grew at an average rate of 2.98 percent from 1968 to 1982, and 1.55 percent over the past 5 years. As enrollments increase and the economy recovers (weakly), it is conceivable that the variable's growth could diminish. A constant growth rate is seen as a lower-bound.

The second estimate was based on the assumption that real operating expenditures (total, not per ADM), would grow at 1.6 percent per year -- roughly the average annual growth rate experienced over the past 10 years.

The projections of real operating expenditures, total operating expenditures in current (inflated) dollars, expenditures per ADM and real (deflated) expenditures per ADM are shown on Table 3.

Figure 5 shows the plot of actual and projected real operating expenditures, as deflated by the Consumer's Price Index for Portland. The projections show an assumed 1.6 percent annual growth, and the growth resulting from an assumed constant real expenditure per ADM.

Figure 6 shows Real Expenditures per ADM, using the same two assumptions.

Table 3: Alternative Projections: Operating Expenditures, 1983-1992

Year	"Real" Op. Exp.1		Total Op. Expend.2		Op. Exp./ADM 3		"Real" Op. Exp./ADM 4	
	Constant Exp/ADM	1.6% Growth	Constant Exp/ADM	1.6% Growth Real Op Exp	Constant Exp/ADM	1.6% Growth Real Op Exp	Constant Exp/ADM	1.6% Growth Real Op Exp
1982	451	451	1302	1302	3008	3008	1043	1043
1983	450	458	1349	1374	3129	3187	1043	1062
1984	451	466	1423	1469	3289	3396	1043	1077
1985	455	473	1523	1582	3490	3625	1043	1084
1986	460	481	1640	1713	3717	3881	1043	1090
1987	464	488	1761	1851	3958	4158	1043	1096
1988	468	496	1891	2004	4216	4467	1043	1106
1989	474	504	2039	2169	4489	4774	1043	1110
1990	482	512	2209	2346	4781	5077	1043	1108
1991	486	520	2370	2538	5088	5449	1043	1116
1992	497	529	2580	2749	5420	5775	1043	1111
10 Year Average Annual Growth	0.98	1.6%	7.08	7.76	6.07	6.74	0.0	0.63

1. $ millions
2. $ millions
3. $ (dollars)
4. $ (dollars)

Figure 5

"REAL" OPERATING EXPENDITURES

DEFLATED BY CPI-U

1968 - 1992

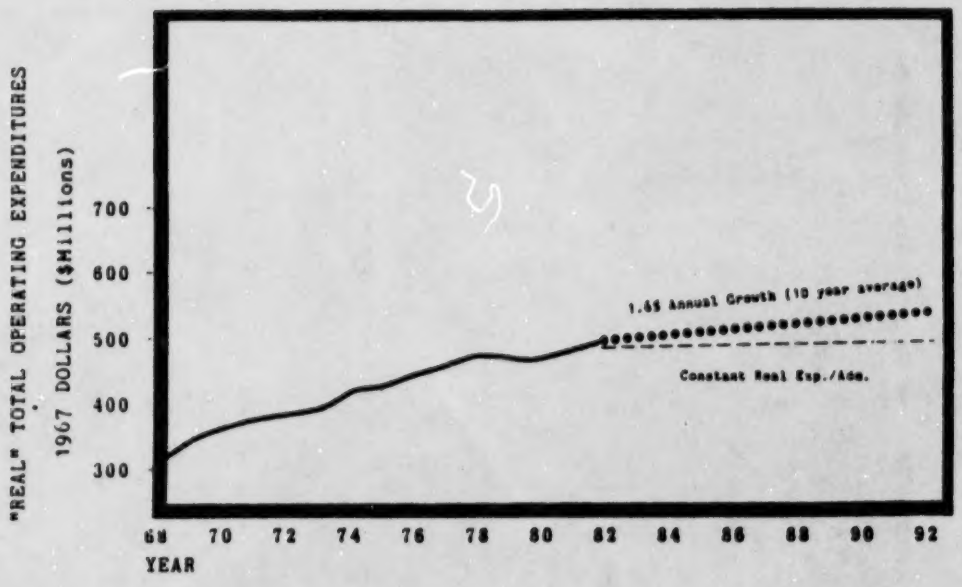


Figure 6

REAL EXPENDITURES PER ADM: ALTERNATIVE PROJECTIONS

(Deflated by CPI-U)

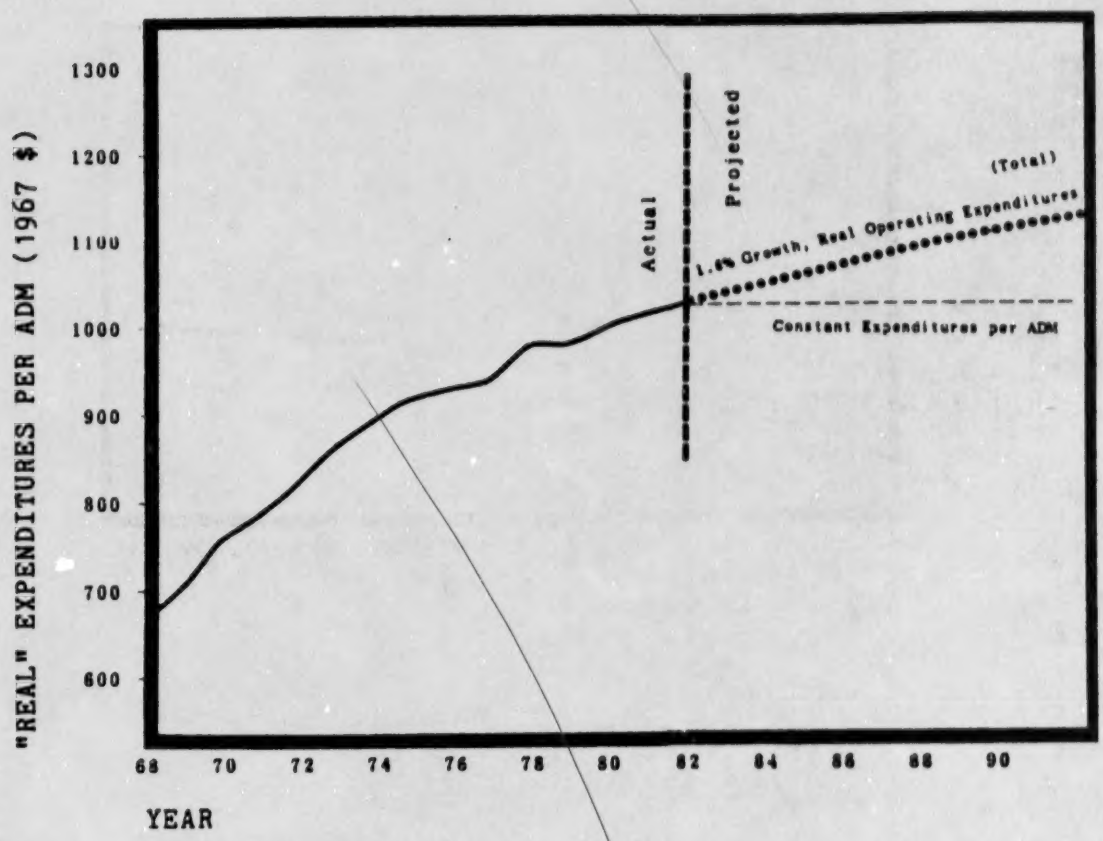


Figure 7

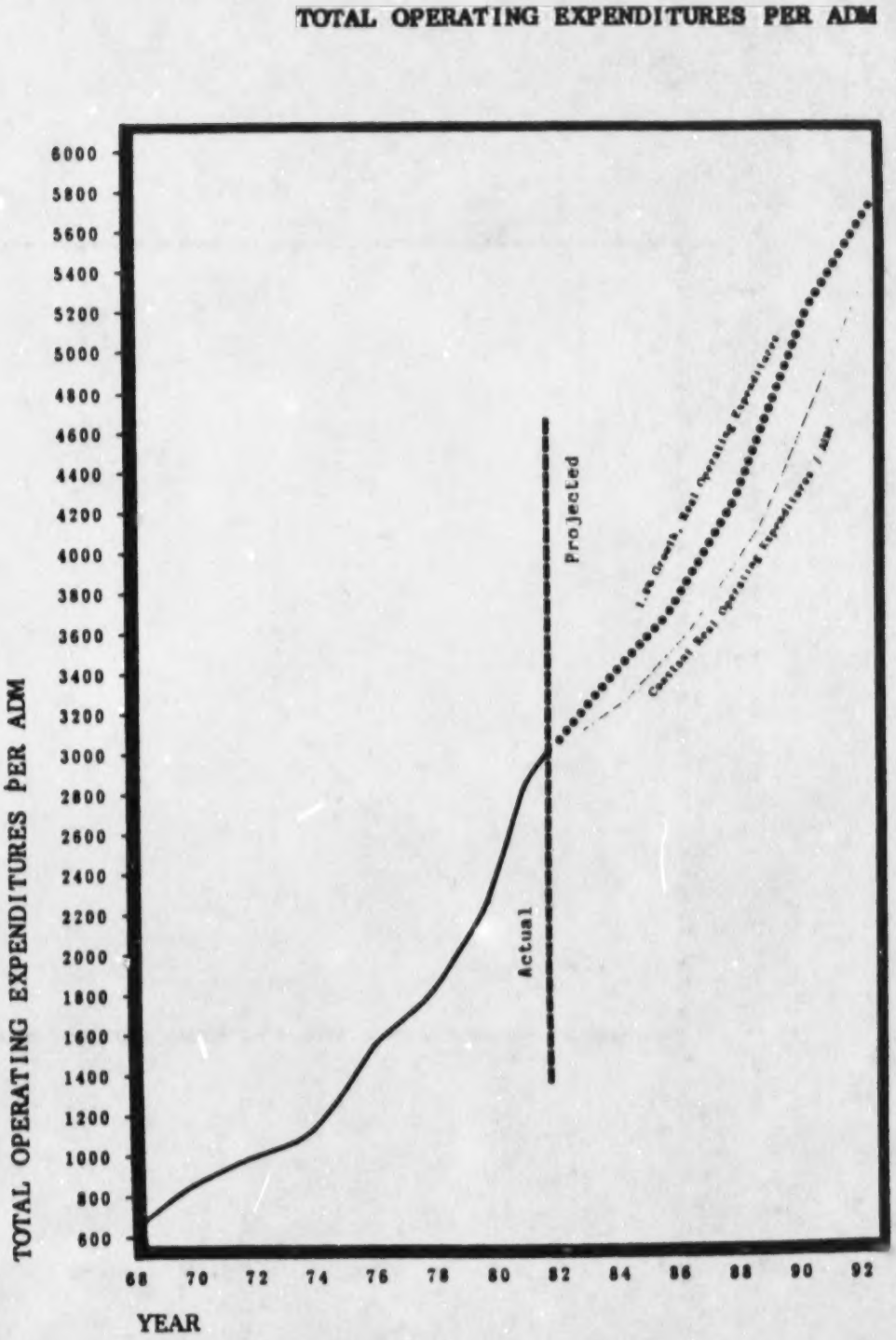
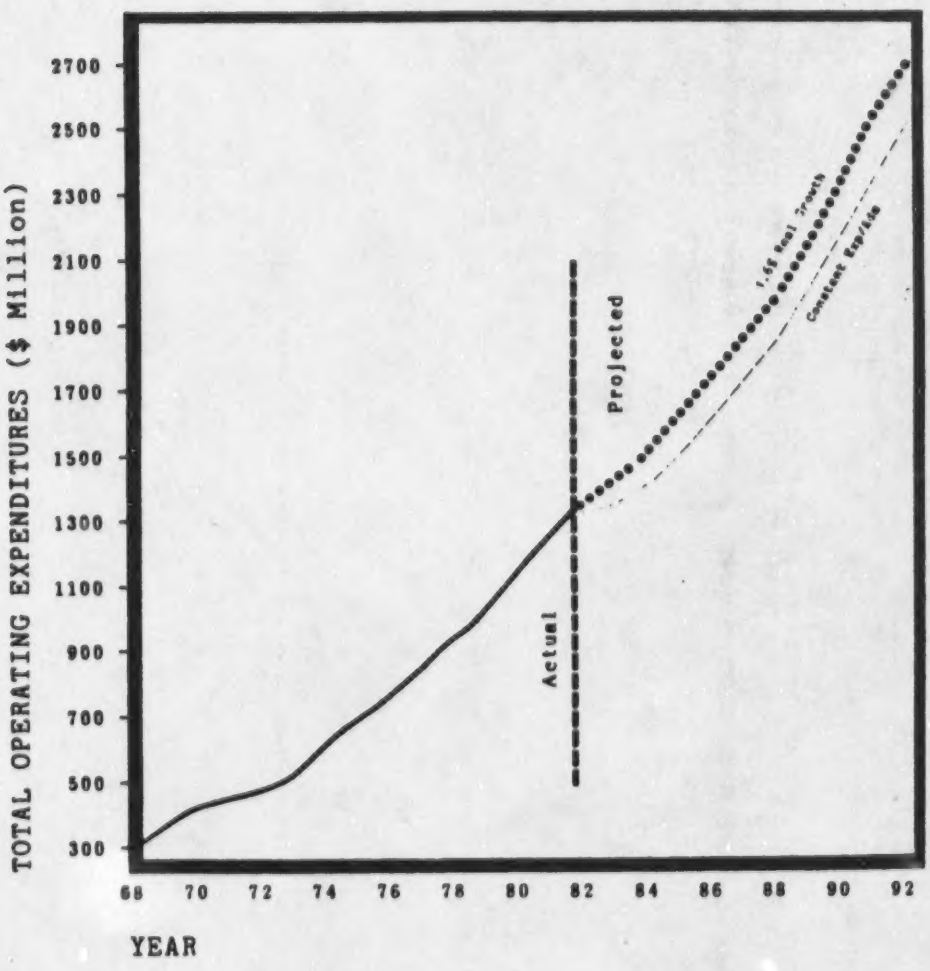

TOTAL OPERATING EXPENDITURES PER ADM
TOTAL OPERATING EXPENDITURES PER ADM
6000
5800
5600
5400
5200
5000
4800
4600
4400
4200
4000
3800
3600
3400
3200
3000
2800
2600
2400
2200
2000
1800
1600
1400
1200
1000
800
600
68
70
72
74
76
78
80
82
84
86
88
90
92
YEAR
Actual
Projected
1.4% Growth, Real Operating Expenditures
Constant Real Operating Expenditures / ADM

Figure 8

TOTAL OPERATING EXPENDITURES



Figures 7 and 8 show, respectively, Total Operating Expenditures per ADM and Total Operating Expenditures, both in current (inflated) dollars.

A cautionary note: the forecasts show what can occur if the assumptions are valid, but cannot be considered the best prediction of what will happen. Inflation and enrollment estimates could be wrong. No economic feedback is built-in the projections. Over a decade, it is reasonable to expect revenue constraints to temper school expenditures -- but none have been included in this first glimpse of what might happen in the future.

Implications for the Future -- and Revenues

The preceding information on total operating expenditures shows the plausibility of school expenditures growing at a 7.8 percent average annual rate over the next 10 years. The estimate has enormous potential (and virtual certainty) of being wrong -- but it is not possible to determine whether actual expenditures will be higher or lower. If the estimate is accurate, policy-makers should evaluate Oregon demographics and the revenue structure to determine what pressures are building, if any. For example, by 1992, school expenditures are expected to increase by 111 percent over the 1982 level (using the 1.6 percent growth assumption). Inflation, under these assumptions, is estimated to increase 80 percent and population is estimated to grow about 13.6 percent. Multiplying population and inflation yields a potential increase in personal income of 104 percent -- not quite enough to maintain the status quo, yet not as drastic as it might first have seemed. The question remains whether the personal income tax will generate the required revenues, or whether the property tax burden will stay the same or increase. Are other revenue sources, such as timber receipts, going to remain steady? Will the property tax base maintain the same ratio of homes to business property? Is the state general fund likely to grow by 111 percent? Will property tax levies increase enough

to maintain their same proportion of the school revenue base? Will there be structural changes that affect the growth of school expenditures? These are just a few of the questions to be explored, but which will not be answered in this report.

Part 2: Diversity Among Oregon School Districts

Practically all of the preceding discussion of school finance in Oregon has been on a statewide basis, i.e., on elementary and secondary education in aggregate. It is important that the reader realize another dimension of the role of state support and have some understanding of the diversity that exists among Oregon school districts.

State support of schools via BSSF not only provides dollars to educate students while providing some property tax relief, but also helps equalize the system. Dollars allocated to equalization means that poorer districts will receive relatively larger grants than richer districts. The fairness of the school system is enhanced among school districts through the allocation formula. This creates an additional pressure on the legislature to "adequately" fund BSSF: as state support slips, the unfairness, i.e., inequity of the system is increased due to varying abilities of school districts to fund education. Examples of how Oregon's school districts vary are shown below.

Table 4 shows selected statistics obtained from the Department of Education's computer tape that is used to make Basic School Support Fund allocations. Forty-two districts are shown from around the state, selected to represent a good cross-section of Oregon's 310 districts. The grant data shown are based on the original 1982-83 appropriation of $439 million, but the actual appropriation was subsequently reduced by the legislature to $426 million. Thus, the last four columns are more than was actually received, but do show the variance among districts.

Explanation of columns:

Col. 1: county
2: district name and number

3: Type 1 = elementary (1-6), 2 = elementary (1-8), 3 = high school (7-12), 4 = union high (9-12), 5 = unified (1-12)

4: Average Daily Membership (students) as of June 1981

5: District property value (True Cash Value) per student

6: Net Operating Expenditures (excluding transportation) per student

7: "Approved Program" per student, on which state distributions are based

8: Basic Grant portion of BSSF allocation, per student

9: Transportation grant, per student

10: Equalization grant per student

11: Total BSSF grant per student (based on $439 million appropriation)

The sample districts range in size from 4.5 ADM for Plush 18 to 48,174.9 for Portland 1J. Property tax "wealth" per student varies from $75,579 in Ninety-One (Clackamas) to almost $1 million in Plush. Plush 18 is a case by itself, but there are other relatively well-off districts such as McKenzie 68 or Reedsport 105. Portland has a relatively higher true cash value per student than the other large districts.

Operating expenditures per student range from $1,982 in South Umpqua to $4800 in Sherman UH1 (ignoring Plush 18). The unweighted mean for the sample is $2768, again omitting Plush 18.

The 1982-83 approved program limit per ADM for purposes of making state BSSF allocations is $2459.22. Some small districts receive a "small district correction" that results in some numbers higher than the limit. The Basic Grant is allocated as a flat 26.4 percent of the approved program. Those districts with approved programs less than the limit have an approved program equal to their actual net operating expenditures.

The data show that transportation grants vary considerably, from 0 to $511 per student.

Equalization per ADM also varies substantially, from $0 for the property-rich districts to $949 for Clackamas Ninety-One.

The total BSSF grant is the sum of Basic Grants, Equalization, Transportation and, not shown here, Growth and Decline Grants (explained in Technical Report No. 2)

Also not shown on the table are the amounts received for federal forest fees and common school funds. These additional resources can explain how districts such as Eugene 4J receive no equalization, but Beaverton 48J, with almost equal property wealth, does receive equalization.

It also should be noted that the district's relative rankings are affected by the size of the appropriation.

In summary, Table 4 illustrates that Oregon has a wide variety of school districts. Unfortunately it is not possible to capture all the differences between district such as Portland 1J and Klamath Falls or LaGrande.

TABLE 4

5-Mar-83 15:32

SELECTED BSSF STATISTICS
1982-1983

COUNTY	DISTRICT NAME	TYPE	ADM JUNE TOTAL	TCV /ADM	OPERATE EXPEND /ADM	APP PROG /ADM	BASIC GRANT /ADM	TRANS. /ADM	EQUAL. /ADM	BSSF TOTAL /ADM
BAKER	BAKER 5J	5	2,345.0	123,783	2,148	2,147.82	567	59	371	1,001
BENTON	CORVALLIS 509J	5	6,665.5	159,906	2,988	2,459.22	650	76	200	927
CLACKAMAS	LAKE OSWEGO 7J	5	5,752.5	182,237	2,849	2,459.22	650	55	0	718
CLACKAMAS	OREGON CITY 62	5	6,617.0	117,661	2,657	2,459.22	650	59	596	1,312
CLACKAMAS	NINETY-ONE 91	2	426.0	75,578	2,327	2,327.43	615	82	848	1,653
CLATSOP	ASTORIA 1	5	1,427.5	153,842	3,056	2,459.22	650	66	271	988
COOS	COOS BAY 9	5	4,380.0	159,217	3,030	2,459.22	650	107	206	963
COOS	NORTH BEND 13	5	3,025.0	127,629	2,616	2,459.22	650	78	518	1,256
DESCHUTES	BEND 1	5	7,320.0	190,234	2,349	2,349.41	621	82	0	720
DESCHUTES	REDMOND 2J	5	3,470.0	128,313	2,186	2,185.84	577	84	388	1,051
DOUGLAS	ROSEBURG 4	5	6,180.0	145,841	2,285	2,285.48	604	76	183	864
DOUGLAS	SOUTH UMPQUA 19	5	2,162.0	97,945	1,982	1,982.42	524	73	517	1,115
DOUGLAS	REEDSPORT 105	5	1,366.5	252,412	2,657	2,459.22	650	61	0	711
GILLIAM	OLEX 11	5	18.5	540,961	3,636	3,635.90	961	511	0	1,546
HARNEY	BURNS UH 2	4	360.0	118,903	3,822	2,459.22	650	103	192	981
HOOD RIVER	HOOD RIVER 1	5	2,745.0	146,956	2,855	2,474.90	654	110	145	916
JACKSON	ASHLAND 5	5	2,700.0	153,987	2,548	2,459.22	650	47	234	932
JACKSON	MEDFORD 549	5	9,185.0	148,360	2,435	2,434.75	643	67	274	988
KLAMATH	KLAMATH FALLS 1	2	2,050.0	129,452	2,274	2,274.10	601	29	330	961
LAKE	PLUSH 18	5	4.5	996,495	11,334	********	2,995	210	0	3,206
LANE	EUGENE 4J	5	17,005.0	172,142	3,178	2,459.22	650	47	0	698
LANE	SPRINGFIELD 19	5	8,973.0	155,718	2,662	2,459.22	650	54	136	853
LANE	CRESWELL 40	5	1,010.0	123,945	2,796	2,459.22	650	65	453	1,173
LANE	MCKENZIE 68	5	404.0	656,085	4,084	2,459.22	650	130	0	780
LINN	SCIO 95	5	640.0	83,241	2,799	2,459.22	650	109	769	1,534
LINN	CENTRAL LINN 552	5	849.0	198,449	3,581	2,459.22	650	151	0	805
MALHEUR	HARPER 66	5	86.0	126,932	2,574	2,573.84	680	102	625	1,444
MARION	SALEM 24J	5	22,534.0	141,635	2,721	2,459.22	650	45	372	1,071
MARION	WOODBURN 103	5	2,050.0	158,128	2,566	2,459.22	650	51	209	911
MARION	CASCADE UH 5	3	1,035.0	92,167	2,514	2,459.22	650	112	857	1,627
MARION	SILVERTON UH 7J	4	810.0	116,780	2,247	2,248.81	593	64	557	1,221
MULTNOMAH	PORTLAND 1J	5	48,174.8	228,523	2,965	2,459.22	650	70	0	731
MULTNOMAH	PARKROSE 3	5	3,440.0	193,909	3,167	2,459.22	650	51	0	714
MULTNOMAH	GRESHAM 4	2	4,800.0	111,239	2,179	2,179.18	576	77	605	1,265
POLK	FALLS CITY 57	5	203.0	135,730	2,876	2,459.22	650	0	450	1,102
SHERMAN	SHERMAN UH 1	4	140.0	188,503	4,800	2,459.22	650	338	0	988
UMATILLA	UMATILLA 6	5	882.5	100,454	2,318	2,318.24	612	80	732	1,434
UMATILLA	HERMISTON 8	5	3,175.0	110,034	2,256	2,255.81	596	45	626	1,282
UMATILLA	PENDLETON 16	5	3,340.0	126,144	2,415	2,415.35	638	85	516	1,249
UNION	LA GRANDE 1	5	2,785.0	111,596	2,785	2,459.22	650	28	609	1,301
WASHINGTON	REEDVILLE 29	1	1,540.0	105,802	2,415	2,415.28	638	46	734	1,435
WASHINGTON	BEAVERTON 48J	5	19,963.0	170,526	2,859	2,459.22	650	57	109	816

Part 3: Comparisons with Other States

Numerous individuals interviewed for Technical Report No. 1 expressed interest in how Oregon's education finance efforts compare to other states'. Recent studies show that Oregon:

* Ranked 4th among the 50 states and the District of Columbia in per capita state and local expenditures for local schools (including capital outlay), for 1979-80.[2]

* Ranked 4th in current expenditures for public elementary and secondary schools per pupil in average daily membership, 1981-82 and 5th in 1980-81.[1][2]

* Ranked 44th in state receipts as a percent of total receipts for public elementary and secondary education, for 1980-82 and 45th in 1981-82.[1][2]

* Ranked 12th in local and "other"receipts as a percent of total receipts for public elementary and secondary education.[1]

* Ranked 36th in federal receipts as a percent of total receipts.[1]

* Ranked 26th in pupils in average daily attendance per teacher in public elementary and secondary schools, Fall 1981.

* Ranked 18th in state and local tax collections in 1979-80 as percent of personal income.[2]

* Ranked 13th in estimated salary of classroom teachers in 1980-81[1]

* Ranked 3rd in current expenditures per pupil in average daily attendance for administration, 1978-79.[2]

Figure 9, reproduced from Education Week [1], shows relative rankings of states by 1980-81 expenditures per pupil and by estimated salary of classroom teachers. Table 5, also from Education Week, shows state rankings by source of receipts for 1980-81.

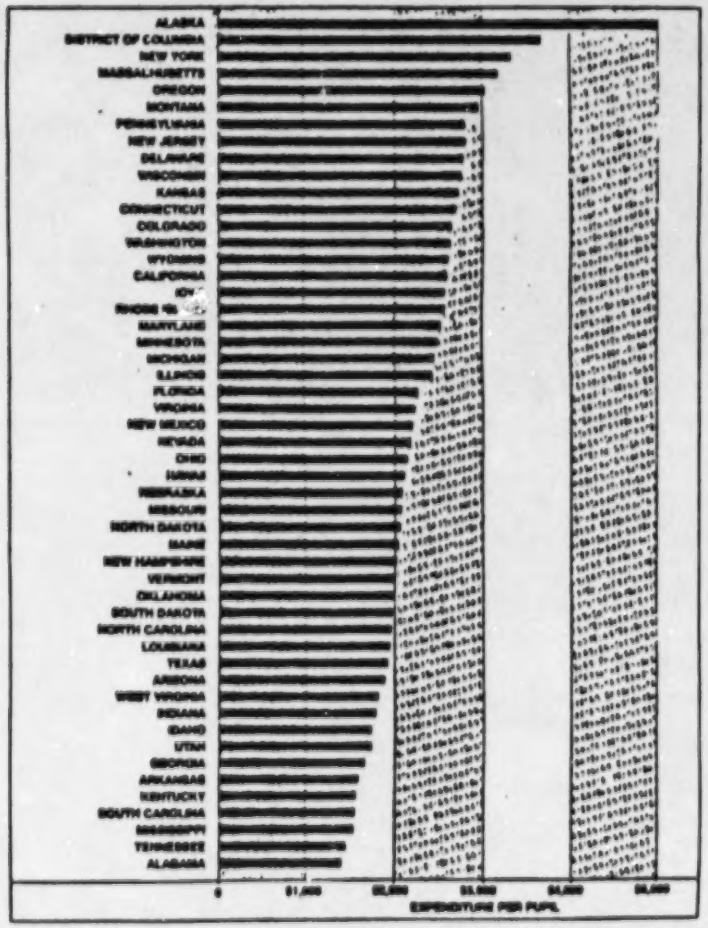
Sources:

1. Education Week, November 3, 1982
2. National Education Association, Rankings of the States, 1982, Washington, D.C., Tables H-7, H-15, F-8, C-6, H-18, E-5. See Appendix D.

Appendix D contains a selection of tables (reproduced with permission of the NEA) that have been cited on the previous page.

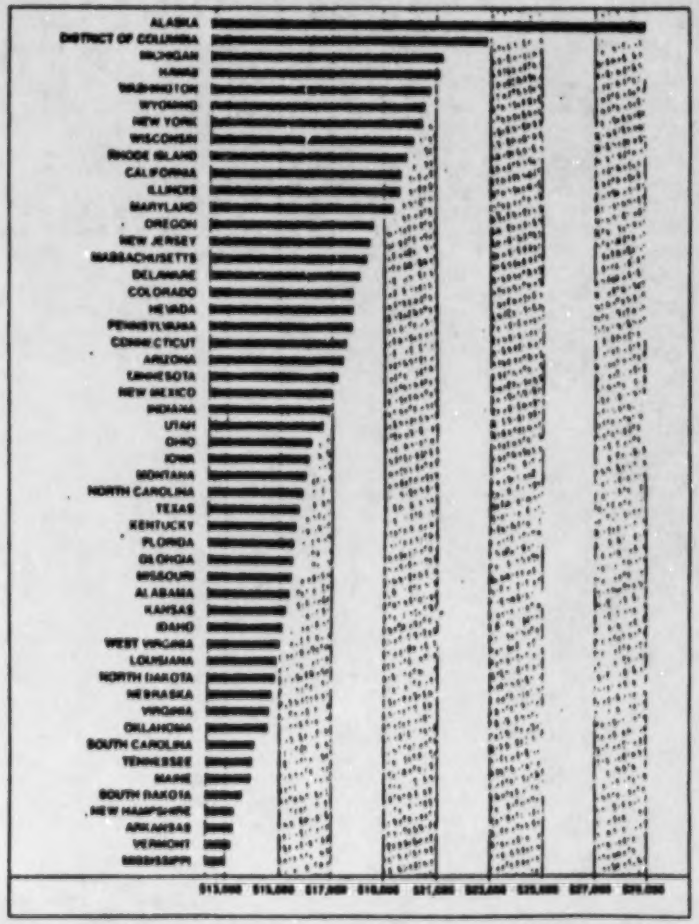
FIGURE 9

Ranking of Estimated Expenditures Per Pupil By State 1980-81



The estimated national average expenditure per pupil in average daily attendance (A.D.A.) for the 1980-81 school year was $2,360, 12.2 percent higher than the 1979-80 estimate of $2,095. Alaska reported the highest per-pupil cost, $5,010, followed by $3,882 for the District of Columbia. The lowest per-pupil cost, $1,384, was estimated by Alabama, followed by $1,458 for Tennessee.

Ranking of Estimated Salary of Classroom Teachers By State 1980-81



The estimated average annual salary of classroom teachers for the United States in 1980-81 was $17,360 compared with $16,170 in 1979-80, representing an increase of approximately 7.4 percent. Classroom teachers' average salaries varied greatly among the states, ranging from $13,000 for Mississippi to $29,000 for Alaska and $22,863 for the District of Columbia.

Source: Education Week, November 3, 1982

TABLE 5

State Rankings of Estimated Receipts, By Source As a Percent of Total Estimated Revenue Receipts For Public Elementary and Secondary Education: 1980-1981[1]

Federal Receipts		State Receipts		Local & "Other" Receipts	
Mississippi	17.1	Hawaii[2]	81.8	District of Columbia[2]	83.7
South Carolina	16.9	Alaska	79.6	New Hampshire	83.7
District of Columbia	16.3	Washington	76.4	Nebraska	70.7
Hawaii	15.8	New Mexico	69.8	Connecticut	66.3
Louisiana	14.9	Kentucky	66.6	Vermont	65.9
Arkansas	14.4	Delaware	66.6	Michigan	64.4
Tennessee	14.0	Alabama	66.1	New Jersey	63.1
Alabama	13.9	California	65.5	Rhode Island	60.2
New Mexico	13.6	North Carolina	64.0	Massachusetts	60.1
Georgia	12.8	Idaho	60.2	Maryland	59.5
North Carolina	12.6	Mississippi	59.4	South Dakota	59.5
South Dakota	12.6	West Virginia	57.9	Oregon	58.3
Kentucky	12.4	Minnesota	56.6	Wisconsin	56.8
Delaware	11.9	Florida	55.6	Iowa	54.5
Oklahoma	11.8	Indiana	55.2	New York	54.5
West Virginia	11.3	Louisiana	55.2	Illinois	54.3
Texas	11.1	Georgia	54.9	Colorado	52.3
Florida	10.5	Utah	53.9	Nevada	51.3
Virginia	9.8	Oklahoma	52.7	Ohio	51.2
California	9.6	Arizona	52.5	Virginia	50.4
Missouri	9.4	Arkansas	51.4	Kansas	50.1
Montana	9.3	South Carolina	49.7	Pennsylvania	48.2
Illinois	8.9	Maine	48.8	Missouri	48.8
Arizona	8.7	Montana	47.0	Tennessee	43.2
Iowa	8.4	Texas	45.7	Maine	43.1
North Dakota	8.4	North Dakota	45.0	Texas	43.0
Ohio	8.2	Pennsylvania	43.9	Wyoming	41.6
Maine	8.1	Nevada	43.8	Utah	38.4
Pennsylvania	8.0	Kansas	42.8	Indiana	38.0
Utah	7.6	Tennessee	42.8	Minnesota	37.0
Vermont	7.3	Colorado	41.7	North Dakota	36.6
Kansas	7.1	New York	40.7	Arizona	36.0
Wisconsin	7.1	Ohio	40.6	Montana	35.9
New Hampshire	7.0	Virginia	39.8	Arkansas	34.2
Nebraska	6.8	Iowa	39.0	Florida	34.0
Oregon	6.7	Missouri	38.6	Oklahoma	32.9
Indiana	6.6	Illinois	36.9	South Carolina	32.3
Washington	6.5	Wisconsin	35.8	Georgia	32.3
Iowa	6.4	Maryland	35.0	Idaho	31.8
Minnesota	6.3	Massachusetts	34.3	West Virgina	30.8
Rhode Island	6.1	Rhode Island	33.7	Louisiana	29.9
Wyoming	6.1	Wyoming	33.6	California	23.8
Colorado	5.9	New Jersey	33.5	North Carolina	23.5
Massachusetts	5.7	Oregon	33.1	Mississippi	23.4
Connecticut	5.5	Michigan	30.2	Delaware	21.6
Maryland	5.5	Connecticut	28.2	Alabama	20.0
Michigan	5.3	South Dakota	27.0	Kentucky	19.0
Nevada	4.9	Vermont	26.8	Alaska	17.7
New York	4.8	Nebraska	17.9	New Mexico	16.6
New Jersey	3.4	New Hampshire	9.4	Washington	12.6
Alaska	2.7	District of Columbia[2]	0.0	Hawaii	2.4

[1] Revenue receipts from intermediate source are not ranked. Therefore, percents for a given state will not add up to 100.0 percent.
[2] In Hawaii and the District of Columbia all revenue from other than federal sources are included as local revenue (in the case of the District of Columbia) or state revenue (in the case of Hawaii) except that Hawaii received a small amount of revenue from "other" sources.

Source: Education Week, November 3, 1982

APPENDICES

NOTE: Only part of the Appendix material referred to in the Technical Report is reproduced here. Complete appendix material may be obtained upon request to FORE.

APPENDIX A : HISTORICAL DATA FOR SELECTED VARIABLES, 1968-1982

ROW	YEAR	ADM	ORPOP	USPOP	TOPEXP
1	1.00000	460371.00000	2051.00000	199.29999	325.49994
2	2.00000	466515.00000	2076.00000	201.29999	363.59998
3	3.00000	468725.00000	2091.00000	203.29999	398.00000
4	4.00000	466857.00000	2143.00000	206.79999	421.59998
5	5.00000	464188.00000	2183.00000	209.29999	459.19995
6	6.00000	461286.00000	2225.00000	211.39999	505.09998
7	7.00000	458979.00000	2266.00000	213.29999	580.00000
8	8.00000	457685.00000	2249.00000	215.49997	659.69995
9	9.00000	458148.00000	2342.00000	217.59998	716.49988
10	10.00000	457813.00000	2396.00000	219.79999	777.09998
11	11.00000	455163.00000	2472.00000	222.09998	883.29993
12	12.00000	450982.00000	2544.00000	224.59998	993.09998
13	13.00000	446673.00000	2640.00000	227.69998	1132.69995
14	14.00000	438222.00000	2661.00000	229.79999	1238.09985
15	15.00000	432708.00000	2656.00000	232.00000	1301.69995

ROW	EX/ADM	WSEMPL	TCV	SCHLV	TOTLV
1	715.00000	679.19995	16017.00000	275.00000	388.09998
2	787.00000	708.49988	17251.00000	307.39996	452.79999
3	858.00000	710.49988	18797.00000	341.39996	503.29999
4	912.00000	729.09998	20261.00000	364.49994	541.29993
5	990.00000	774.29993	22111.00000	394.59998	583.89990
6	1097.00000	816.19995	24873.00000	394.39996	595.19995
7	1265.00000	837.89990	28274.00000	458.89996	686.89990
8	1444.00000	837.39990	32015.00000	521.29993	778.39990
9	1567.00000	878.49988	35536.00000	567.79993	860.00000
10	1700.00000	936.89990	40508.00000	577.19995	901.00000
11	1945.00000	1009.39990	46155.00000	575.79993	916.09998
12	2207.00000	1056.19995	57893.00000	636.19995	1014.39990
13	2541.00000	1044.59985	71367.00000	743.49988	1191.29980
14	2891.00000	1019.49988	81613.00000	889.49988	1435.59985
15	3008.00000	971.39990	84700.00000	958.79993	1544.00000

ROW	OREMP	ORCPIU	GNP$	GNP72$	OR.Y/P
1	843.49988	103.49998	868.00000	1052.00000	3311.00000
2	872.19995	108.59999	936.00000	1079.00000	3520.00000
3	802.79993	113.20000	993.00000	1086.00000	3711.00000
4	834.59998	116.09999	1063.00000	1108.00000	3956.00000
5	893.69995	119.49998	1186.00000	1186.00000	4346.00000
6	939.00000	127.29999	1326.00000	1255.00000	4835.00000
7	939.00000	142.79999	1434.00000	1248.00000	5335.00000
8	929.00000	156.49997	1549.00000	1234.00000	5733.00000
9	966.00000	166.89999	1718.00000	1300.00000	6386.00000
10	1047.00000	180.19998	1918.00000	1372.00000	6989.00000
11	1124.00000	198.29999	2156.00000	1437.00000	7827.00000
12	1134.00000	225.39999	2414.00000	1483.00000	8615.00000
13	1188.00000	255.39999	2633.00000	1474.00000	9296.00000
14	1199.00000	278.29999	2938.00000	1503.00000	9991.00000
15	1167.79980	288.39996	3077.00000	1480.00000	10328.00000

ROW	OR.PY	BSSF	PIT$	TAXREL	AVESAL
* 1 *	6635.00000	77.39999	204.29999	0.00000	8589.00000
* 2 *	7258.00000	88.89999	213.09998	0.00000	9198.00000
* 3 *	7795.00000	88.89999	226.19998	0.00000	9852.00000
* 4 *	8504.00000	99.39999	251.19998	11.20000	9742.00000
* 5 *	9541.00000	104.09999	300.59998	14.30000	9909.00000
* 6 *	10824.00000	143.49997	352.39996	69.49998	10679.00000
* 7 *	12168.00000	170.79999	424.00000	77.29999	11584.00000
* 8 *	13328.00000	200.69998	472.09998	77.70000	12968.00000
* 9 *	15148.00000	217.39999	561.89990	74.89999	13791.00000
* 10 *	17048.00000	269.00000	686.19995	77.29999	14648.00000
* 11 *	19643.00000	341.39996	916.09998	100.09999	15809.00000
* 12 *	22307.00000	384.39996	868.00000	229.39999	17247.00000
* 13 *	24587.00000	406.19995	1005.09998	251.09998	19084.00000
* 14 *	26526.00000	414.00000	968.29993	266.79999	21333.00000
* 15 *	27430.00000	426.19995	994.89990	212.[illegible]999	22500.00000

ROW	REX/AD	RSCHLV	RTOTEX	SCHRAT	REALPI
* 1 *	6.90821	2.65700	3.14493	0.02423	64.10628
* 2 *	7.24678	2.83057	3.34807	0.02625	66.83241
* 3 *	7.57950	3.01590	3.51590	0.02678	68.86041
* 4 *	7.85530	3.13953	3.63135	0.02672	73.24719
* 5 *	8.28452	3.30209	3.84266	0.02641	79.84100
* 6 *	8.61744	3.09819	3.96779	0.02393	85.02750
7 *	6.85854	3.21359	4.06162	0.02429	85.21008
* 8 *	9.22684	3.33099	4.21534	0.02431	85.16295
* 9 *	9.38885	3.40204	4.29299	0.02420	90.76093
* 10 *	9.43396	3.20311	4.31243	0.02224	94.60600
* 11 *	9.80837	2.90368	4.45436	0.01985	99.05698
* 12 *	9.79148	2.82254	4.40594	0.01752	98.96628
* 13 *	9.94910	2.91112	4.43500	0.01669	96.26860
* 14 *	10.38807	3.19619	4.44880	0.01759	95.31441
* 15 *	10.42996	3.32455	4.51352	0.01823	95.11096

ROW	RAVSAL	STAFF#	BSS/PI	SLV/PI	ADM/ST
* . *	82.98552	37928.00000	0.01167	0.04145	12.13802
* 2 *	84.69614	39080.89844	0.01225	0.04235	11.93716
* 3 *	87.03180	40456.89844	0.01140	0.04380	11.58578
* 4 *	83.91042	42562.00000	0.01169	0.04286	10.96887
* 5 *	82.92050	42841.59375	0.01091	0.04136	10.83498
* 6 *	83.88846	43541.89844	0.01326	0.03644	10.59407
* 7 *	81.12045	43682.69531	0.01404	0.03771	10.50711
* 8 *	82.86263	43823.39844	0.01506	0.[illegible]911	10.44385
* 9 *	82.63031	46413.19531	0.01[illegible]	0.03748	9.87107
* 10 *	81.28746	46201.49219	0.01578	0.03386	9.90905
* 11 *	79.72264	46995.09375	0.01738	0.02931	9.68533
* 12 *	76.51730	48194.09375	0.01723	0.02852	9.35762
* 13 *	74.72200	49204.89844	0.01652	0.03024	9.07781
* 14 *	76.65468	48168.69531	0.01561	0.03353	9.09765
* 15 *	78.01665	45933.09375	0.01554	0.03495	9.42040

ROW	CX/ADM	RCX/AD	OX/STF	ROPX/#	SALTCH
* 1 *	0.70704	0.00683	8.58205	8.29183	8239.00000
* 2 *	0.77940	0.00718	9.30378	8.56701	8814.00000
* 3 *	0.84911	0.00750	9.83763	8.69049	8913.00000
* 4 *	0.90306	0.00778	9.90555	8.53191	9258.00000
* 5 *	0.98925	0.00828	10.71855	8.96950	9667.00000
* 6 *	1.09498	0.00860	11.60032	9.11258	10078.00000
* 7 *	1.26367	0.00885	13.27757	9.29802	11006.00000
* 8 *	1.44138	0.00921	15.05360	9.61891	12280.00000
* 9 *	1.56390	0.00937	15.43742	9.24950	13035.00000
* 10 *	1.69742	0.00942	16.81980	9.33396	13832.00000
* 11 *	1.94062	0.00979	18.79557	9.47835	14904.00000
* 12 *	2.20208	0.00977	20.60625	9.14208	16266.00000
* 13 *	2.53586	0.00993	23.02006	9.01333	18010.00000
* 14 *	2.82528	0.01015	25.70341	9.23586	20305.00000
* 15 *	3.00826	0.01043	28.33904	9.82630	21326.00000

ROW	RSLTCH	SALELM	SALJRH	RSLJRH
* 1 *	79.60387			
* 2 *	81.16022			
* 3 *	78.73674			
* 4 *	79.74161	9122.00000	9570.00000	82.42894
5 *	80.89540	9255.00000	9724.00000	81.37239
6 *	79.16733	9725.00000	10176.00000	79.93715
* 7 *	77.07283	10548.00000	11183.00000	78.31232
* 8 *	78.46646	12053.00000	12524.00000	80.02557
* 9 *	78.10065	12776.00000	13355.00000	80.01797
* 10 *	76.75916	13546.00000	14264.00000	79.15649
* 11 *	75.15884	14601.00000	15300.00000	77.15582
* 12 *	72.16504	15897.00000	16595.00000	73.62466
* 13 *	70.51683	17640.00000	18660.00000	73.06186
* 14 *	72.96083	19748.00000	20909.00000	75.13115
* 15 *	73.94591	20927.00000	22121.00000	76.70250

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ROW	RSLJRH	SLV/TL	SCHPTR	BS+PTR	BSPR/Y
* 1 *		0.70858	0.00000	77.39999	0.01167
* 2 *		0.67889	0.00000	88.89999	0.01225
* 3 *		0.67832	0.00000	88.89999	0.01140
* 4 *	82.42894	0.67338	7.54184	106.94183	0.01258
* 5 *	81.37239	0.67580	9.66395	113.76393	0.01192
* 6 *	79.93715	0.66263	46.05308	189.55304	0.01751
* 7 *	78.31232	0.66807	51.64210	222.44208	0.01828
* 8 *	80.02557	0.66971	52.03623	252.73621	0.01896
* 9 *	80.01797	0.66023	49.45140	266.85138	0.01762
* 10 *	79.15649	0.64062	49.52002	316.52002	0.01868
* 11 *	77.15582	0.62853	62.91623	404.31616	0.02058
* 12 *	73.62466	0.62717	143.87250	528.27246	0.02368
* 13 *	73.06186	0.62411	156.71350	562.91345	0.02289
* 14 *	75.13115	0.61960	165.30966	579.30957	0.02184
* 15 *	76.70250	0.62098	132.20755	558.40747	0.02036

ROW	RBS+PR	RBSSF
* 1 *	0.74783	0.74783
* 2 *	0.81860	0.81860
* 3 *	0.78534	0.78534
* 4 *	0.92112	0.85616
* 5 *	0.95200	0.87113
* 6 *	1.48903	1.12726
* 7 *	1.55772	1.19608
* 8 *	1.61493	1.28243
* 9 *	1.59887	1.30258
* 10 *	1.76759	1.49279
* 11 *	2.03891	1.72163
* 12 *	2.34371	1.70541
* 13 *	2.20405	1.59045
* 14 *	2.08160	1.48760
* 15 *	1.93623	1.47781

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APPENDIX B: CORRELATION MATRIX FOR SELECTED VARIABLES

	YEAR	ADM	ORPOP	USPOP	TOPEXP	EX/ADM	WSEMPL	TCV
YEAR	1.000							
ADM	-0.884	1.000						
ORPOP	0.984	-0.907	1.000					
USPOP	0.999	-0.888	0.985	1.000				
TOPEXP	0.977	-0.944	0.989	0.977	1.000			
EX/ADM	0.970	-0.954	0.985	0.970	0.999	1.000		
WSEMPL	0.954	-0.779	0.958	0.950	0.920	0.905	1.000	
TCV	0.943	-0.962	0.972	0.945	0.991	0.995	0.873	1.000
SCHLV	0.960	-0.956	0.959	0.962	0.984	0.987	0.854	0.981
TOTLV	0.961	-0.957	0.964	0.963	0.988	0.991	0.861	0.986
OREMP	0.954	-0.885	0.981	0.953	0.963	0.957	0.965	0.944
ORCPIU	0.961	-0.953	0.983	0.962	0.998	0.998	0.901	0.997
GNP$	0.978	-0.944	0.991	0.978	0.999	0.998	0.925	0.989
GNP72$	0.979	-0.843	0.979	0.978	0.952	0.941	0.987	0.913
OR.Y/P	0.986	-0.928	0.995	0.985	0.997	0.994	0.945	0.980
OR.PY	0.980	-0.932	0.995	0.980	0.998	0.995	0.940	0.985
BSSF	0.973	-0.901	0.989	0.970	0.985	0.979	0.963	0.964
PIT$	0.970	-0.875	0.985	0.967	0.973	0.965	0.969	0.944
TAXREL	0.916	-0.898	0.954	0.920	0.949	0.949	0.905	0.954
AVESAL	0.966	-0.953	0.978	0.965	0.997	0.999	0.894	0.993
REX/AD	0.986	-0.829	0.948	0.986	0.935	0.924	0.940	0.885
RSCHLV	0.306	-0.179	0.176	0.314	0.199	0.198	0.096	0.158
RTOTEX	0.953	-0.729	0.898	0.951	0.870	0.854	0.928	0.802
SCHRAT	-0.891	0.880	-0.943	-0.891	-0.930	-0.926	-0.925	-0.926
REALPI	0.939	-0.706	0.901	0.936	0.855	0.836	0.960	0.784
RAVSAL	-0.863	0.841	-0.919	-0.869	-0.892	-0.886	-0.900	-0.888
STAFF#	0.929	-0.684	0.913	0.930	0.862	0.844	0.955	0.806
BSS/PI	0.869	-0.684	0.851	0.857	0.822	0.803	0.937	0.754
SLV/PI	-0.839	0.660	-0.857	-0.834	-0.797	-0.777	-0.952	-0.742
ADM/ST	-0.971	0.780	-0.953	-0.973	-0.918	-0.905	-0.960	-0.871
CX/ADM	0.972	-0.953	0.985	0.972	0.999	1.000	0.907	0.994
RCX/AD	0.983	-0.816	0.941	0.982	0.925	0.913	0.938	0.872
OX/STF	0.969	-0.958	0.978	0.969	0.997	0.998	0.895	0.991
ROPX/#	0.779	-0.624	0.668	0.774	0.682	0.670	0.676	0.606
SALTCH	0.965	-0.958	0.978	0.965	0.997	0.999	0.892	0.994
RSLTCH	-0.877	0.806	-0.925	-0.875	-0.905	-0.897	-0.916	-0.895

	SCHLV	TOTLV	OREMP	ORCPIU	GNP$	GNP72$	OR.Y/P	OR.PY
SCHLV	1.000							
TOTLV	0.999	1.000						
OREMP	0.912	0.922	1.000					
ORCPIU	0.983	0.987	0.957	1.000				
GNP$	0.981	0.986	0.969	0.996	1.000			
GNP72$	0.907	0.913	0.978	0.934	0.959	1.000		
OR.Y/P	0.973	0.978	0.976	0.991	0.998	0.971	1.000	
OR.PY	0.973	0.978	0.976	0.994	0.999	0.966	0.999	1.000
BSSF	0.942	0.949	0.984	0.980	0.987	0.973	0.993	0.993
PIT$	0.925	0.933	0.985	0.964	0.975	0.975	0.984	0.983
TAXREL	0.910	0.916	0.936	0.953	0.948	0.919	0.948	0.953
AVESAL	0.990	0.993	0.948	0.998	0.996	0.932	0.991	0.992
REX/AD	0.924	0.921	0.915	0.910	0.936	0.965	0.948	0.938
RSCHLV	0.333	0.305	0.051	0.165	0.190	0.178	0.186	0.167
RTOTEX	0.852	0.848	0.866	0.836	0.872	0.939	0.892	0.878
SCHRAT	-0.860	-0.872	-0.966	-0.934	-0.935	-0.926	-0.940	-0.945
REALPI	0.811	0.812	0.894	0.821	0.863	0.961	0.887	0.874
RAVSAL	-0.827	-0.835	-0.933	-0.894	-0.893	-0.891	-0.901	-0.906
STAFF#	0.816	0.818	0.884	0.835	0.863	0.942	0.887	0.879
BSS/PI	0.744	0.750	0.883	0.799	0.825	0.902	0.854	0.844
SLV/PI	-0.694	-0.707	-0.907	-0.776	-0.810	-0.921	-0.837	-0.831
ADM/ST	-0.889	-0.889	-0.918	-0.894	-0.920	-0.968	-0.936	-0.928
CX/ADM	0.987	0.991	0.956	0.999	0.998	0.943	0.994	0.996
RCX/AD	0.913	0.910	0.908	0.898	0.926	0.962	0.940	0.929
OX/STF	0.990	0.993	0.949	0.996	0.996	0.935	0.991	0.992
ROPX/#	0.713	0.700	0.634	0.641	0.682	0.723	0.694	0.674
SALTCH	0.991	0.994	0.950	0.998	0.996	0.932	0.990	0.992
RSLTCH	-0.832	-0.842	-0.913	-0.907	-0.902	-0.897	-0.913	-0.918

	BSSF	PIT$	TAXREL	AVESAL	REX/AD	RSCHLV	RTOTEX	SCHRAT
BSSF	1.000							
PIT$	0.994	1.000						
TAXREL	0.947	0.917	1.000					
AVESAL	0.975	0.960	0.937	1.000				
REX/AD	0.932	0.934	0.868	0.919	1.000			
RSCHLV	0.090	0.092	0.060	0.206	0.400	1.000		
RTOTEX	0.881	0.892	0.799	0.847	0.986	0.436	1.000	
SCHRAT	-0.963	-0.952	-0.951	-0.916	-0.830	0.132	-0.766	1.000
REALPI	0.890	0.907	0.803	0.825	0.963	0.300	0.981	-0.810
RAVSAL	-0.916	-0.908	-0.936	-0.867	-0.808	0.066	-0.751	0.951
STAFF#	0.888	0.900	0.847	0.831	0.941	0.288	0.952	-0.811
BSS/PI	0.895	0.903	0.792	0.798	0.869	0.006	0.872	-0.859
SLV/PI	-0.880	-0.896	-0.810	-0.762	-0.827	0.117	-0.830	0.899
ADM/ST	-0.927	-0.932	-0.887	-0.894	-0.977	-0.333	-0.970	0.846
CX/ADM	0.980	0.966	0.947	0.999	0.927	0.200	0.857	-0.927
RCX/AD	0.925	0.929	0.855	0.908	0.999	0.407	0.990	-0.821
OX/STF	0.975	0.961	0.935	0.999	0.924	0.214	0.855	-0.916
ROPX/#	0.664	0.671	0.541	0.674	0.843	0.606	0.866	-0.505
SALTCH	0.974	0.959	0.938	0.999	0.919	0.211	0.845	-0.916
RSLTCH	-0.937	-0.926	-0.944	-0.867	-0.820	0.095	-0.771	0.956

	REALPI	RAVSAL	STAFF#	BSS/PI	SLV/PI	ADM/ST	CX/ADM	RCX/AD
REALPI	1.000							
RAVSAL	0.791	1.000						
STAFF#	0.962	-0.823	1.000					
BSS/PI	0.906	-0.799	0.855	1.000				
SLV/PI	-0.910	0.854	-0.871	-0.939	1.000			
ADM/ST	-0.967	0.849	-0.987	-0.857	0.859	1.000		
CX/ADM	0.840	-0.887	0.846	0.807	-0.781	-0.907	1.000	
RCX/AD	0.968	-0.801	0.940	0.872	-0.830	-0.975	0.916	1.000
OX/STF	0.832	-0.871	0.828	0.804	-0.767	-0.894	0.899	0.915
ROPX/#	0.799	-0.458	0.671	0.701	-0.574	-0.732	0.676	0.856
SALTCH	0.824	-0.873	0.829	0.793	-0.760	-0.894	0.999	0.907
RSLTCH	-0.797	0.928	-0.843	-0.843	0.863	0.858	-0.898	-0.812

	OX/STF	ROPX/#	SALTCH	RSLTCH
OX/STF	1.000			
ROPX/#	0.698	1.000		
SALTCH	0.999	0.673	1.000	
RSLTCH	-0.883	-0.474	-0.881	1.000

>

Appendix C: Selected Regressions

The following pages are copies of computer regression runs performed on the historical data shown in Appendix A. Although several equations were tested, only a few most likely to be of interest are shown here.

1. $EX/ADM = f(TIME^2)$

   While the curve is a good fit of the existing data, the equation is of questionable benefit for predicting future values of expenditures per ADM. Actual versus Predicted data are shown on the plot on the following page. The last two years data points deviate substantially from the prediced value, i.e., fail to capture a change in the trend. By year 20 *1987), the predicted value would be 4901 and by 1992 at 7246 -- unreasonable estimates.

2. $EX/ADM = f(CPI)$

   The resulting equation is

   $EX/ADM = -481.54 + 12.072\ (CPI)$

   $\qquad\qquad (-17.3) \qquad (79.3)$

   The statistical measures of fit and significance indicate a good explanatory equation, although there aresignificant autocorrelation problems from the time series data.

3. $ADM = f(Employment, Population)$

   $ADM = 598820 + 85.388\ (Employment) - 92.838\ (Population)$

   $R^2 = .9069$

4. Real "Computed" Expenditures/ADM = f(Time)

   $RCX/AD = .006877 + .00024941\ (Year) \qquad R^2 = .9634$

   $\qquad\qquad (58.3) \qquad (19.2)$

5. $REX/AD = f(Staff\ \#)$

   The coeffiecients were statistically significant, but the residuals, particularly for the most recent year, were too high for predictive purposes. This may be seen in the plot.

APPENDIX D : INTERSTATE COMPARISONS

E-4. PER CAPITA TOTAL TAX COLLECTIONS OF STATE AND LOCAL GOVERNMENTS, 1979-80

1. ALASKA	$4,188.68
2. NEW YORK	1,494.87
3. DIST. OF COL.	1,474.71
4. WYOMING	1,399.36
5. HAWAII	1,277.52
6. MASSACHUSETTS	1,269.37
7. CALIFORNIA	1,172.23
8. NEW JERSEY	1,137.49
9. MINNESOTA	1,124.73
10. MARYLAND	1,104.23
11. ILLINOIS	1,083.83
12. MICHIGAN	1,075.44
13. CONNECTICUT	1,070.27
14. WISCONSIN	1,061.40
15. DELAWARE	1,058.67
16. ARIZONA	1,007.42
17. MONTANA	999.69
18. RHODE ISLAND	992.46
19. COLORADO	989.70
20. WASHINGTON	988.85
UNITED STATES	986.57
21. OREGON	978.54
22. PENNSYLVANIA	978.00
23. NEVADA	972.17
24. IOWA	967.24
25. NEBRASKA	963.25
26. KANSAS	926.12
27. VERMONT	900.02
28. NEW MEXICO	879.24
29. MAINE	858.26
30. VIRGINIA	855.61
31. NORTH DAKOTA	846.81
32. LOUISIANA	840.62
33. UTAH	839.71
34. OKLAHOMA	826.66
35. OHIO	810.20
36. TEXAS	805.90
37. WEST VIRGINIA	795.75
38. SOUTH DAKOTA	788.55
39. GEORGIA	769.94
40. MISSOURI	759.46
41. FLORIDA	757.86
42. IDAHO	754.28
43. NORTH CAROLINA	748.25
44. INDIANA	743.73
45. KENTUCKY	740.06
46. NEW HAMPSHIRE	739.98
47. SOUTH CAROLINA	708.27
48. TENNESSEE	656.12
49. ARKANSAS	654.38
50. ALABAMA	649.96
51. MISSISSIPPI	646.42

Bureau of the Census, *Governmental Finances in 1979-80*, p. 90.

E-9. STATE AND LOCAL TAX COLLECTIONS IN 1979-80, AS PERCENT OF PERSONAL INCOME, 1980

1. ALASKA	32.62
2. NEW YORK	14.53
3. WYOMING	12.79
4. HAWAII	12.61
5. MASSACHUSETTS	12.25
6. DIST. OF COL.	12.22
7. MONTANA	11.69
8. MINNESOTA	11.54
9. VERMONT	11.46
10. ARIZONA	11.43
11. WISCONSIN	11.33
12. NEW MEXICO	11.19
13. UTAH	10.95
14. MAINE	10.80
15. MICHIGAN	10.78
16. CALIFORNIA	10.69
17. MARYLAND	10.53
18. OREGON	10.48
19. RHODE ISLAND	10.47
20. NEW JERSEY	10.38
21. PENNSYLVANIA	10.34
UNITED STATES	10.33
22. IOWA	10.31
23. ILLINOIS	10.28
24. NEBRASKA	10.26
25. DELAWARE	10.21
26. WEST VIRGINIA	10.18
27. SOUTH DAKOTA	10.06
28. LOUISIANA	9.91
29. COLORADO	9.85
30. MISSISSIPPI	9.80
31. SOUTH CAROLINA	9.72
32. KENTUCKY	9.70
33. NORTH DAKOTA	9.66
34. WASHINGTON	9.57
35. NORTH CAROLINA	9.55
36. GEORGIA	9.51
37. IDAHO	9.34
38. KANSAS	9.25
39. CONNECTICUT	9.11
40. VIRGINIA	9.09
41. OKLAHOMA	9.05
42. NEVADA	9.04
43. ARKANSAS	8.98
44. ALABAMA	8.66
45. OHIO	8.54
46. TENNESSEE	8.48
47. MISSOURI	8.43
48. TEXAS	8.42
49. FLORIDA	8.32
50. INDIANA	8.30
51. NEW HAMPSHIRE	8.09

Computed from Bureau of the Census, *Governmental Finances in 1979-80*, pp. 18-26; and Bureau of Economic Analysis, *Survey of Current Business*, July 1981, p. 30.

F-8. ESTIMATED PERCENT OF REVENUE FOR PUBLIC ELEMENTARY AND SECONDARY SCHOOLS FROM STATE GOVERNMENTS, 1981-82

1. HAWAII	87.11
2. ALASKA	80.11
3. NEW MEXICO	76.08
4. WASHINGTON	75.35
5. CALIFORNIA	74.34
6. KENTUCKY	69.63
7. DELAWARE	68.02
8. ALABAMA	65.68
9. WEST VIRGINIA	62.69
10. NORTH CAROLINA	62.58
11. INDIANA	60.58
12. OKLAHOMA	59.68
13. MINNESOTA	58.27
14. NORTH DAKOTA	58.01
15. SOUTH CAROLINA	57.08
16. LOUISIANA	55.91
17. NEVADA	55.45
18. GEORGIA	55.15
19. IDAHO	54.68
20. ARKANSAS	54.55
21. UTAH	54.51
22. MISSISSIPPI	53.19
23. FLORIDA	51.48
24. TEXAS	50.80
25. MAINE	49.10
26. MONTANA	49.01
UNITED STATES	48.87
27. TENNESSEE	47.12
28. ARIZONA	44.99
29. PENNSYLVANIA	44.92
30. KANSAS	43.75
31. OHIO	41.67
32. IOWA	41.53
33. MARYLAND	40.67
34. VIRGINIA	40.60
35. COLORADO	40.31
36. NEW YORK	40.21
37. NEW JERSEY	39.43
38. ILLINOIS	38.73
39. MASSACHUSETTS	38.45
40. MISSOURI	38.39
41. MICHIGAN	37.30
42. WISCONSIN	36.65
43. RHODE ISLAND	36.11
44. CONNECTICUT	34.04
45. OREGON	33.85
46. WYOMING	29.09
47. VERMONT	27.45
48. SOUTH DAKOTA	27.18
49. NEBRASKA	16.69
50. NEW HAMPSHIRE	6.69
DIST. OF COL.	NA

Computed from NEA Research, unpublished data.

C-6. PUPILS IN AVERAGE DAILY ATTENDANCE PER TEACHER IN PUBLIC ELEMENTARY AND SECONDARY SCHOOLS, FALL 1981

1. UTAH	22.93
2. CALIFORNIA	22.17
3. MICHIGAN	21.36
4. WASHINGTON	19.67
5. TENNESSEE	19.39
6. NEVADA	19.36
7. IDAHO	19.02
8. HAWAII	18.69
9. NORTH CAROLINA	18.56
10. KENTUCKY	18.29
11. NEW MEXICO	18.02
12. SOUTH CAROLINA	17.92
13. ALABAMA	17.68
14. OHIO	17.66
15. ARIZONA	17.65
16. FLORIDA	17.49
INDIANA	17.49
18. COLORADO	17.35
19. ARKANSAS	17.33
20. MISSISSIPPI	17.28
UNITED STATES	16.92
21. MARYLAND	16.52
22. LOUISIANA	16.51
23. GEORGIA	16.49
24. MAINE	16.36
25. NEW HAMPSHIRE	16.32
26. OREGON	16.17
27. TEXAS	16.06
28. IOWA	16.03
29. WEST VIRGINIA	15.95
DIST. OF COL.	15.95
31. PENNSYLVANIA	15.92
32. VIRGINIA	15.82
33. DELAWARE	15.77
34. OKLAHOMA	15.71
35. MINNESOTA	15.64
36. ILLINOIS	15.49
37. MISSOURI	15.30
38. NEBRASKA	15.26
39. NEW YORK	15.13
40. ALASKA	15.10
41. MONTANA	15.00
42. SOUTH DAKOTA	14.99
43. NORTH DAKOTA	14.98
44. CONNECTICUT	14.77
45. NEW JERSEY	14.72
46. KANSAS	14.12
47. WISCONSIN	14.10
48. RHODE ISLAND	14.07
49. VERMONT	13.84
50. WYOMING	13.08
51. MASSACHUSETTS	12.49

Computed from NEA Research, unpublished data.

Source: National Education Association, Rankings of the States, 1982,
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H-1. STATE AND LOCAL GOVERNMENT EXPENDITURES FOR ALL EDUCATION IN 1979-80, AS PERCENT OF PERSONAL INCOME IN 1980

1. ALASKA	14.12
2. UTAH	9.58
3. NEW MEXICO	9.04
4. WYOMING	8.35
5. MONTANA	8.08
6. VERMONT	8.00
7. OREGON	7.83
8. ARIZONA	7.63
9. MISSISSIPPI	7.61
10. SOUTH CAROLINA	7.47
WISCONSIN	7.47
12. NORTH DAKOTA	7.45
13. IOWA	7.44
14. SOUTH DAKOTA	7.38
15. DELAWARE	7.05
WASHINGTON	7.05
17. WEST VIRGINIA	7.01
18. MICHIGAN	6.98
19. NORTH CAROLINA	6.92
20. ALABAMA	6.83
21. MINNESOTA	6.69
22. KENTUCKY	6.63
COLORADO	6.63
24. NEBRASKA	6.60
25. NEW YORK	6.52
26. ARKANSAS	6.51
27. IDAHO	6.34
28. LOUISIANA	6.29
UNITED STATES	6.16
29. RHODE ISLAND	6.12
30. OKLAHOMA	6.09
MARYLAND	6.09
MAINE	6.09
33. TEXAS	6.05
34. TENNESSEE	5.95
35. INDIANA	5.94
36. GEORGIA	5.89
37. KANSAS	5.82
38. CALIFORNIA	5.80
39. OHIO	5.79
40. VIRGINIA	5.78
41. HAWAII	5.73
42. MASSACHUSETTS	5.55
43. NEW JERSEY	5.52
44. PENNSYLVANIA	5.46
45. NEVADA	5.34
46. ILLINOIS	5.32
47. MISSOURI	5.25
48. NEW HAMPSHIRE	5.13
49. FLORIDA	5.06
50. DIST. OF COL.	4.98
51. CONNECTICUT	4.70

Computed from Bureau of the Census, *Governmental Finances in 1979-80* pp. 36-50, and Bureau of Economic Analysis, *Survey of Current Business* July 1981 p. 30

H-2. PER CAPITA TOTAL EXPENDITURES OF STATE AND LOCAL GOVERNMENTS FOR ALL EDUCATION, 1979-80

1. ALASKA	$1,812.41
2. WYOMING	913.63
3. UTAH	734.81
4. DELAWARE	731.58
5. OREGON	731.26
6. WASHINGTON	728.60
7. NEW MEXICO	710.94
8. WISCONSIN	699.84
9. IOWA	697.78
10. MICHIGAN	695.92
11. MONTANA	691.48
12. ARIZONA	672.77
13. NEW YORK	670.62
14. COLORADO	666.09
15. NORTH DAKOTA	653.09
16. MINNESOTA	652.16
17. MARYLAND	638.27
18. CALIFORNIA	636.39
19. VERMONT	628.32
20. NEBRASKA	619.70
21. NEW JERSEY	606.61
22. DIST. OF COL.	600.92
UNITED STATES	588.11
23. KANSAS	582.65
24. HAWAII	580.05
25. RHODE ISLAND	579.96
26. TEXAS	579.04
27. SOUTH DAKOTA	578.72
28. NEVADA	575.07
29. MASSACHUSETTS	563.08
30. ILLINOIS	561.13
31. OKLAHOMA	556.44
32. CONNECTICUT	551.96
33. OHIO	549.15
34. WEST VIRGINIA	547.72
35. SOUTH CAROLINA	544.55
36. VIRGINIA	544.31
37. NORTH CAROLINA	542.45
38. LOUISIANA	533.52
39. INDIANA	531.68
40. PENNSYLVANIA	515.99
41. ALABAMA	512.32
42. IDAHO	512.25
43. KENTUCKY	506.27
44. MISSISSIPPI	501.66
45. MAINE	483.52
46. GEORGIA	476.24
47. ARKANSAS	474.62
48. MISSOURI	472.83
49. NEW HAMPSHIRE	469.79
50. FLORIDA	460.58
51. TENNESSEE	460.33

Bureau of the Census, *Governmental Finances in 1979-80* p. 91

H-7. PER CAPITA STATE AND LOCAL EXPENDITURES FOR LOCAL SCHOOLS (INCLUDING CAPITAL OUTLAY), 1979-80

1. ALASKA	$1,347.39
2. WYOMING	630.58
3. MONTANA	536.24
4. OREGON	500.91
5. NEW YORK	498.31
6. WASHINGTON	491.80
7. NEW MEXICO	485.92
8. DIST. OF COL.	479.02
9. UTAH	478.64
10. MICHIGAN	475.74
11. IOWA	465.25
12. MASSACHUSETTS	462.55
13. NEW JERSEY	462.19
14. MINNESOTA	460.40
15. WISCONSIN	455.92
16. COLORADO	448.50
17. MARYLAND	439.87
18. ARIZONA	432.92
19. CONNECTICUT	421.93
20. CALIFORNIA	421.14
21. DELAWARE	419.42
22. NEVADA	416.48
23. NEBRASKA	415.02
UNITED STATES	410.28
24. ILLINOIS	405.52
25. OHIO	401.44
26. PENNSYLVANIA	401.24
27. NORTH DAKOTA	397.37
28. TEXAS	396.68
29. SOUTH DAKOTA	391.92
30. KANSAS	389.34
31. WEST VIRGINIA	386.61
32. VERMONT	373.35
33. LOUISIANA	368.92
34. RHODE ISLAND	368.57
35. VIRGINIA	366.65
36. OKLAHOMA	359.53
37. INDIANA	356.25
38. MAINE	352.82
39. NORTH CAROLINA	350.80
40. HAWAII	349.81
41. GEORGIA	345.41
42. MISSOURI	343.60
43. SOUTH CAROLINA	340.20
44. FLORIDA	339.74
45. IDAHO	336.69
46. ARKANSAS	327.50
47. NEW HAMPSHIRE	324.24
48. KENTUCKY	314.06
49. MISSISSIPPI	308.16
50. ALABAMA	302.08
51. TENNESSEE	300.79

Bureau of the Census, *Governmental Finances in 1979-80* p. 91

H-11. CURRENT EXPENDITURES FOR PUBLIC ELEMENTARY AND SECONDARY SCHOOLS PER PUPIL IN AVERAGE DAILY ATTENDANCE AS PERCENT OF NATIONAL AVERAGE, 1981-82

1. ALASKA	223.62
2. NEW JERSEY	142.62
3. NEW YORK	139.09
4. MASSACHUSETTS	135.90
5. DIST. OF COL.	131.53
6. DELAWARE	128.65
7. OREGON	126.97
8. RHODE ISLAND	123.75
9. MINNESOTA	122.62
10. MICHIGAN	122.01
11. CONNECTICUT	121.94
12. MARYLAND	118.94
13. WISCONSIN	113.13
14. WASHINGTON	112.90
15. ILLINOIS	109.97
16. HAWAII	107.99
17. PENNSYLVANIA	106.49
18. KANSAS	106.25
19. IOWA	105.01
20. NORTH DAKOTA	104.58
21. MONTANA	102.64
22. COLORADO	100.02
UNITED STATES	100.00
23. ARIZONA	99.79
24. NEW MEXICO	98.31
25. NEBRASKA	96.70
26. WYOMING	95.54
27. OKLAHOMA	95.34
28. FLORIDA	95.15
29. VIRGINIA	93.07
30. OHIO	92.81
31. MAINE	89.16
32. NORTH CAROLINA	89.03
33. MISSOURI	88.94
34. INDIANA	87.65
35. CALIFORNIA	86.86
36. LOUISIANA	86.11
37. WEST VIRGINIA	84.53
38. NEW HAMPSHIRE	84.19
39. NEVADA	83.20
40. VERMONT	81.36
41. GEORGIA	81.28
42. TEXAS	80.88
43. SOUTH DAKOTA	80.31
44. KENTUCKY	76.19
45. TENNESSEE	74.23
46. UTAH	73.18
47. IDAHO	71.20
48. ARKANSAS	71.17
49. MISSISSIPPI	70.96
50. SOUTH CAROLINA	70.73
51. ALABAMA	53.22

Computed from NEA Research, unpublished data.

H-15. CURRENT EXPENDITURES FOR PUBLIC ELEMENTARY AND SECONDARY SCHOOLS PER PUPIL IN AVERAGE DAILY MEMBERSHIP, 1981-82

1. ALASKA	$5,606
2. NEW JERSEY	3,482
3. NEW YORK	3,378
4. OREGON	3,189
5. DELAWARE	3,169
6. RHODE ISLAND	3,121
7. MINNESOTA	3,112
8. DIST. OF COL.	3,072
9. MASSACHUSETTS	3,010
10. CONNECTICUT	3,013
11. MARYLAND	2,934
12. WISCONSIN	2,850
13. WASHINGTON	2,847
14. ILLINOIS	2,761
15. IOWA	2,737
16. NORTH DAKOTA	2,712
17. KANSAS	2,698
18. HAWAII	2,691
19. PENNSYLVANIA	2,639
20. COLORADO	2,632
21. MONTANA	2,606
22. ARIZONA	2,552
UNITED STATES	2,916
23. NEW MEXICO	2,912
24. NEBRASKA	2,477
25. OKLAHOMA	2,418
26. WYOMING	2,410
27. VIRGINIA	2,356
28. FLORIDA	2,355
29. OHIO	2,316
30. CALIFORNIA	2,303
31. NORTH CAROLINA	2,249
32. MAINE	2,242
33. NEW HAMPSHIRE	2,240
34. INDIANA	2,231
35. LOUISIANA	2,133
36. NEVADA	2,099
37. SOUTH DAKOTA	2,071
38. GEORGIA	2,066
39. VERMONT	2,057
40. TEXAS	2,044
41. KENTUCKY	1,912
42. TENNESSEE	1,874
43. UTAH	1,867
44. ARKANSAS	1,819
45. MISSISSIPPI	1,816
46. SOUTH CAROLINA	1,790
47. ALABAMA	1,360
IDAHO	NA
MICHIGAN	NA
MISSOURI	NA
WEST VIRGINIA	NA

Computed from NEA Research, unpublished data.

H-16. PERCENT INCREASE IN CURRENT EXPENDITURES PER PUPIL IN AVERAGE DAILY MEMBERSHIP, 1971-72 TO 1981-82

1. ALASKA	307.89
2. OKLAHOMA	305.11
3. NEBRASKA	262.37
4. OREGON	245.14
5. NEW MEXICO	244.75
6. NORTH DAKOTA	240.81
7. MONTANA	234.26
8. KANSAS	228.19
9. NORTH CAROLINA	222.97
10. MASSACHUSETTS	222.05
11. COLORADO	221.76
12. RHODE ISLAND	218.17
13. ARKANSAS	215.87
14. MINNESOTA	214.43
15. DELAWARE	214.23
16. KENTUCKY	204.88
17. GEORGIA	203.99
18. NEW JERSEY	202.29
19. MARYLAND	196.53
20. MISSISSIPPI	193.42
21. MAINE	191.55
22. OHIO	191.19
23. TENNESSEE	189.16
24. WISCONSIN	188.61
25. VIRGINIA	188.45
26. FLORIDA	188.28
27. NEW HAMPSHIRE	187.31
28. IOWA	186.24
29. INDIANA	184.06
30. SOUTH DAKOTA	182.91
31. HAWAII	180.22
32. UTAH	179.90
UNITED STATES	178.27
33. ILLINOIS	176.98
34. CONNECTICUT	171.87
35. ARIZONA	168.65
36. WYOMING	168.29
37. SOUTH CAROLINA	164.32
38. PENNSYLVANIA	163.22
39. DIST. OF COL.	162.27
40. LOUISIANA	161.61
41. CALIFORNIA	157.51
42. ALABAMA	156.24
43. NEVADA	149.62
44. NEW YORK	148.36
45. TEXAS	130.12
46. VERMONT	79.28
IDAHO	NA
MICHIGAN	NA
MISSOURI	NA
WASHINGTON	NA
WEST VIRGINIA	NA

Computed from NEA Research, unpublished data.

H-18. CURRENT EXPENDITURES PER PUPIL IN AVERAGE DAILY ATTENDANCE FOR ADMINISTRATION, 1978-79

1. ALASKA	$539.76
2. COLORADO	298.49
3. OREGON	239.96
4. NEBRASKA	216.24
5. WYOMING	199.05
6. DIST. OF COL.	155.17
7. HAWAII	130.21
8. SOUTH CAROLINA	127.83
9. MISSISSIPPI	127.76
10. SOUTH DAKOTA	117.77
11. GEORGIA	116.88
12. DELAWARE	114.86
13. ARKANSAS	114.31
14. NEW JERSEY	108.28
15. NEW YORK	96.25
16. ILLINOIS	95.20
17. TEXAS	94.35
18. MICHIGAN	87.66
19. MASSACHUSETTS	86.68
20. OHIO	81.74
UNITED STATES	80.45
21. IOWA	79.49
22. LOUISIANA	76.95
23. MONTANA	76.11
24. FLORIDA	75.80
25. PENNSYLVANIA	75.31
26. CONNECTICUT	73.78
27. MINNESOTA	72.30
28. KANSAS	72.27
29. ARIZONA	71.11
30. WASHINGTON	70.97
31. VERMONT	70.46
32. NORTH DAKOTA	69.[illegible]
33. MISSOURI	65.64
34. RHODE ISLAND	63.52
35. WISCONSIN	59.60
36. OKLAHOMA	59.42
37. INDIANA	56.00
38. MARYLAND	54.70
39. NEW MEXICO	54.29
40. IDAHO	50.80
41. WEST VIRGINIA	49.84
42. MAINE	47.73
43. NEVADA	43.68
44. NORTH CAROLINA	41.47
45. CALIFORNIA	40.75
46. VIRGINIA	38.46
47. KENTUCKY	36.07
48. ALABAMA	35.14
49. UTAH	28.28
50. TENNESSEE	25.04
51. NEW HAMPSHIRE	22.91

National Center for Education Statistics, unpublished data.

C-11. ESTIMATED AVERAGE SALARIES OF PUBLIC SCHOOL TEACHERS, 1981-82

1. ALASKA	$31,924
2. DIST. OF COL.	24,265
3. HAWAII	23,261
4. NEW YORK	22,826
5. CALIFORNIA	22,755
6. MICHIGAN	22,351
7. WASHINGTON	22,332
8. WYOMING	22,153
9. RHODE ISLAND	21,494
10. MARYLAND	21,120
11. ILLINOIS	21,002
12. OREGON	20,305
13. NEVADA	20,109
14. MINNESOTA	19,903
15. MASSACHUSETTS	19,875
16. NEW JERSEY	19,706
17. COLORADO	19,577
18. WISCONSIN	19,387
19. PENNSYLVANIA	19,307
20. DELAWARE	19,290
UNITED STATES	19,044
21. INDIANA	18,986
22. NEW MEXICO	18,905
23. LOUISIANA	18,500
24. CONNECTICUT	18,317
25. UTAH	18,169
26. OHIO	18,116
27. ARIZONA	18,014
28. IOWA	17,989
29. NORTH DAKOTA	17,686
30. MONTANA	17,625
31. TEXAS	17,485
32. KENTUCKY	17,200
33. WEST VIRGINIA	17,127
34. VIRGINIA	17,090
35. OKLAHOMA	17,020
36. NORTH CAROLINA	16,947
37. FLORIDA	16,907
38. KANSAS	16,712
39. NEBRASKA	16,570
40. MISSOURI	16,499
41. IDAHO	16,388
42. GEORGIA	16,363
43. TENNESSEE	16,175
44. ALABAMA	15,496
45. SOUTH CAROLINA	15,490
46. MAINE	15,105
47. SOUTH DAKOTA	14,717
48. VERMONT	14,715
49. NEW HAMPSHIRE	14,701
50. ARKANSAS	14,223
51. MISSISSIPPI	14,141

NEA Research, unpublished data.

C-17. ESTIMATED AVERAGE SALARIES OF INSTRUCTIONAL STAFF IN PUBLIC SCHOOLS, 1981-82

1. ALASKA	$33,200
2. MASSACHUSETTS	27,946
3. CALIFORNIA	26,191
4. DIST. OF COL.	25,099
5. NEVADA	24,820
6. HAWAII	24,278
7. WASHINGTON	23,392
8. NEW YORK	22,900
9. MICHIGAN	22,202
10. MARYLAND	21,899
11. ILLINOIS	21,863
12. RHODE ISLAND	21,723
13. WYOMING	21,172
14. MINNESOTA	20,815
15. NEW JERSEY	20,671
16. OREGON	20,640
17. COLORADO	20,359
UNITED STATES	20,208
18. NEW MEXICO	20,080
19. DELAWARE	20,013
20. UTAH	19,883
21. WISCONSIN	19,870
22. PENNSYLVANIA	19,850
23. INDIANA	19,740
24. CONNECTICUT	19,020
25. OHIO	18,890
26. LOUISIANA	18,800
27. ARIZONA	18,660
28. IOWA	18,524
29. MONTANA	18,298
30. KENTUCKY	18,200
31. NORTH DAKOTA	18,109
32. TEXAS	17,900
33. VIRGINIA	17,830
34. FLORIDA	17,769
35. WEST VIRGINIA	17,748
36. NEBRASKA	17,672
37. OKLAHOMA	17,580
38. KANSAS	17,506
39. NORTH CAROLINA	17,415
40. GEORGIA	17,180
41. MISSOURI	17,114
42. IDAHO	16,600
43. TENNESSEE	16,473
44. SOUTH CAROLINA	16,255
45. ALABAMA	15,808
46. MAINE	15,605
47. SOUTH DAKOTA	15,503
48. NEW HAMPSHIRE	15,000
49. ARKANSAS	14,669
50. MISSISSIPPI	14,500
51. VERMONT	14,342

NEA Research, unpublished data.

A-11. POPULATION PER SQUARE MILE OF LAND AREA, 1980

1. DIST. OF COL.	10,127.00
2. NEW JERSEY	986.10
3. RHODE ISLAND	897.60
4. MASSACHUSETTS	733.30
5. CONNECTICUT	637.90
6. MARYLAND	428.60
7. NEW YORK	370.60
8. DELAWARE	308.00
9. PENNSYLVANIA	264.60
10. OHIO	263.30
11. ILLINOIS	205.20
12. FLORIDA	179.90
13. MICHIGAN	162.90
14. INDIANA	152.80
15. CALIFORNIA	151.40
16. HAWAII	150.70
17. VIRGINIA	134.60
18. NORTH CAROLINA	120.30
19. TENNESSEE	111.60
20. SOUTH CAROLINA	103.30
21. NEW HAMPSHIRE	102.40
22. LOUISIANA	94.40
23. GEORGIA	94.10
24. KENTUCKY	92.30
25. WISCONSIN	86.40
26. WEST VIRGINIA	80.80
27. ALABAMA	76.60
28. MISSOURI	71.90
UNITED STATES	64.00
29. WASHINGTON	62.10
30. VERMONT	55.10
31. TEXAS	54.30
32. MISSISSIPPI	53.40
33. IOWA	52.10
34. MINNESOTA	51.30
35. OKLAHOMA	44.10
36. ARKANSAS	43.90
37. MAINE	38.30
38. KANSAS	28.90
39. COLORADO	27.90
40. OREGON	27.40
41. ARIZONA	23.90
42. NEBRASKA	20.50
43. UTAH	17.80
44. IDAHO	11.50
45. NEW MEXICO	10.70
46. NORTH DAKOTA	9.40
47. SOUTH DAKOTA	9.10
48. NEVADA	7.30
49. MONTANA	5.40
50. WYOMING	4.90
51. ALASKA	0.70

Bureau of the Census, Statistical Abstract of the United States: 1981, p. 22.